Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

LIBRARY
RECEIVED
JUL 10 1917
U.S. Department of Agriculture

More Than 600,000 Copies Each Issue

FARM and FIRESIDE

The National Farm Paper - Twice a Month

ESTABLISHED 1877

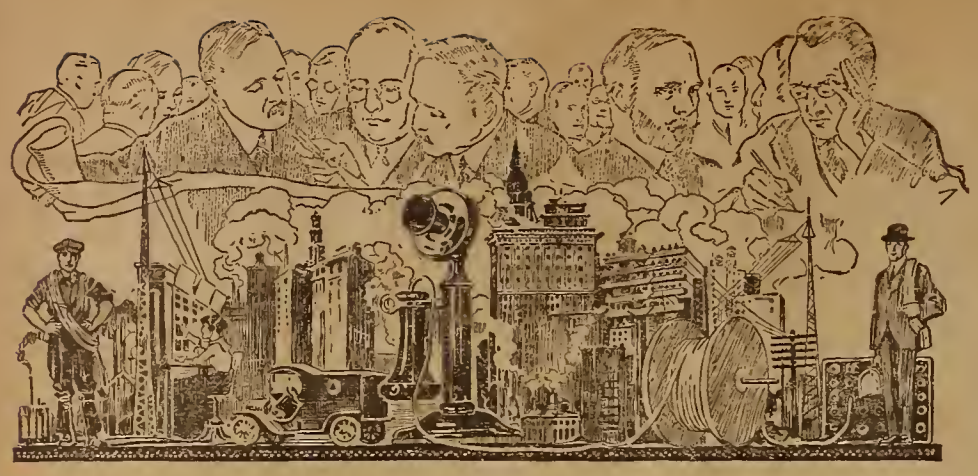
5 cents a copy

Eastern Edition

Saturday, July 7, 1917

PHOTOGRAPH BY JOHN KABEL

"Sweet Bunch of Daisies"



Our Real Reserves

Grim war today drags whole nations in its wake. The organized machinery of the government and the army and the navy in all their power cannot fight unaided. They constitute only in small part the country's real forces.

The bones and sinews of campaigns are supplied by our developed farms and specialized farm machinery; our highly organized steel industry, factories and mines; our facilities of transportation and communication. Railroads, telephone and telegraph systems link together and speed up the many activities of the nation.

But these material resources are not the whole. Back of each industry and activity there must be organizations of human beings, requiring years of patient training and actuated by the spirit of loyal service.

This spirit and training for service in the common welfare constitutes above all else the real strength of a Republic and insures victory. Joining all the country's resources is a fine spirit, a thorough training, a great, sustained concentration of real effort typified by the Bell Telephone System.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

KEROSENE ENGINES
OTTAWA LATEST DESIGN
Durable, Powerful, Reliable, Massive. Built to last; to do hard, heavy work. Uses Cheapest Fuel. Pulls 25 to 50 per cent over rated H-P. 3 Months' Trial. Easy Terms. Sizes 1½ to 22 H-P. Easy to Start. No cranking. No batteries. 10-Year Guarantee. Most practical engine ever built. Engine book free. A Postal brings it. Write today.
THE OTTAWA MANUFACTURING CO.
151 King Street Ottawa, Kansas

I CAN Make YOU The BEST PRICE
Your choice of WITTE High Grade Engines—Gasoline or Kerosene—2 to 22 H-P.—all styles—stationary or on trucks, saw rig, etc., with or without magneto—Cash or Payments. —On a Better Engine
WITTE ENGINES
are made in the largest exclusive engine factory in the U. S. selling direct. 30 years' success proves WITTE Engine quality. Immediate shipment. Book FREE.
WITTE ENGINE WORKS
2060 Oakland Ave., Kansas City, Mo.
2060 Empire Bldg., Pittsburgh, Pa.

Why Buy
Here are three mighty good reasons why you should buy Buckskin Tires in preference to any other on the market:
First—Because they are made by skilled workmen of the finest possible rubber and fabric.
Second—Because they are guaranteed for 4,000 miles.
Third—Because, by buying direct from factory you save fully 30%.
We have a special offer to make. Write for booklet telling about it —also price list. 14
THE L. & M. RUBBER CO.
Wood St., Carrollton, O.
Western Distributing Office
1436 S. Michigan Ave., Chicago
BOOK FREE

Eli HAY PRESS
KING OF BALERS
40 styles and sizes for every purpose. Catalog free.
COLLINS PLOW COMPANY
1116E Hampshire St., Quincy, Ill.

Hydraulic Cider Press Profits
Thirty years' experience enables us to give you all the information you need for cider making.
Write for FREE Booklet Today
Also Boilers, Engines, Sawmills.
E. B. VAN ATTA & CO., 118 Penn Ave., Olean, N. Y.

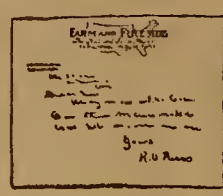
The PERFECT CORN HARVESTER
Sold Direct $19.50 JUST the THING for SHOCK or SILO CUTTING
Works in any kind of soil. Cuts stalks—doesn't pull like other cutters. Absolutely no danger
Cuts Four to Seven Acres a Day
with one man and one horse. Here is what one farmer says: Willow Brook Farm, Dunnellen, N. J., Feb. 20, 1915. Gentlemen: I have found the harvester to do all it was claimed. My corn was heavy and I cut 8 acres in 2 days' time. I think it ideal to harvest corn for the silo. Sidney E. Williams.
SOLD DIRECT TO THE FARMER
Send for booklet and circulars telling all about this labor-saving machine; also containing testimonials of many users. Send for this circular matter today.
LOVE MANUFACTURING COMPANY
Dept. 15 Lincoln, Illinois

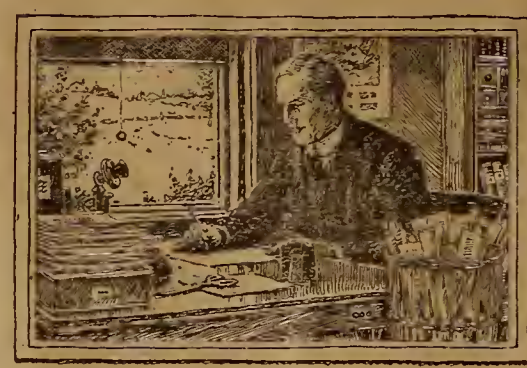
1917 Model
30 DAYS' FREE TRIAL
and freight prepaid on the new 1917 "RANGER" bicycle. Write at once for our *big catalog* and *special offer*.
Improved Models, prices reduced. Extraordinary *new offers*. *You cannot afford to buy* without getting our *latest propositions*. WRITE TODAY.
Boys, be a "Rider Agent" and make big money taking orders for bicycles and supplies. Get our *liberal terms* on a sample to introduce the new "RANGER."
TIRES, equipment, sundries and everything in the bicycle line half usual prices. A few second-hand bicycles $3 to $8 to clear.
MEAD CYCLE CO. DEPT. B-83 CHICAGO

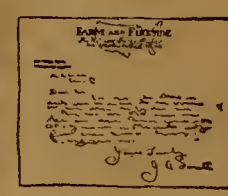
SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN—Keeping IN OIL
SPLASH OILING SYSTEM
Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear
OIL SUPPLY REPLENISHED ONLY ONCE A YEAR
DOUBLE GEARS—Each Carrying Half the Load
Every feature desirable in a windmill in the AUTO-OILED AERMOTOR
Gasoline Engines—Pumps—Tanks
Water Supply Goods—Steel Frame Saws
WRITE AERMOTOR CO. 2500 12TH ST., CHICAGO

The Editor's Letter

A Tenant Fears the Competition of Tractors







A TEXAS tenant has just written me a rather remarkable letter which is a tribute to farm tractors from a mechanical point of view and a protest against them from a sociological side. "Do any of my brother renters," he says, "ever realize that tractors have their disadvantages as well as their advantages? To illustrate my point, I will list all farmers into two classes—the dependent farmers like myself in one class, and the independent farmers in the other.

"By the dependent farmer I mean the one who has to depend on the landowner for a place to farm and earn a living for himself and family. And if he can't rent a farm, what is he going to do?

Fully seventy-five per cent of the renters I know can't do anything but farm. If they go to town in search of employment, they are asked to give their experience. No, they have lived on the farm all their lives and don't know the line of work that the employer has. They can't fill the place and so are out of work or are forced to do ordinary manual labor of the most menial kind.

"Well, that is putting it mildly. Our loved ones are likely to suffer for want of the bare necessities of life. Now, I guess you think I am clear off the tractor subject, but be patient.

"Next comes the independent farmer, the one who owns from 50 to 1,200 acres. The landowner has no fear of starvation. Let us take, for instance, a man who owns 640 acres and has 500 under cultivation. If he owns a tractor he can do his plowing in 50 days, counting 10 acres a day. It would take him at least 100 days to do the same plowing with teams. A tractor can also plow day and night without getting tired, and when the plowing is done there is no expense for keeping it. That is all to the advantage of the man with the tractor and to the disadvantage of the dependent farmer.

"Listen. If the landowner did not own a tractor he could not tend over 100 acres. Four farmers (renters) would be needed to tend the remaining 400 acres. It means that four families would have a home and a living."

And now comes the appeal which is similar to appeals made many times by people in all walks of life and usually in vain.

"Why can't the landowner," he says in conclusion, "be satisfied with a good modest living which his 100 acres and the rent from the other 400 acres would beyond all doubt afford him? He could live and let the other man live. I will admit that the man who farms with a tractor can tend 500 acres and, therefore, increase his profit, but if he does so he will surely drive us small farmers to the wall."

I THINK this man is perfectly sincere in what he says. And because he is so concerned about the matter, and also so mistaken, I want to add a few remarks that may perhaps relieve the minds of others who have similar apprehensions.

You will remember that when the first successful automobiles were made about 1900 there was great alarm about the horse. What would become of poor old Dobbin? We were headed straight for the horseless age, and what a lonesome place this world was going to be without the faithful four-legged hay motor!

But government figures, up to January 1, 1917, show the utter fallacy of these fears. Horses in the United States numbered 18,267,020 in 1900 and 21,126,000 in 1917, an increase of nearly three million. And in those seventeen years the average value of horses increased from $49.08 a head to $102.94. So you see horses increased about 15 per cent in number and over 100 per cent in value—quite different from the predictions.

In the printing business a roar of protest went up some years ago when the linotype machine was invented. This is a machine which sets type much faster than it can be done by hand. When we installed them in our establishment to set the type for FARM AND FIRESIDE the printers said that it meant starvation for them. But business has grown so that we employ more printers than ever before, and the scale of wages is also higher. And the expert who operates the linotype machine is better paid than the man who has fitted himself for just ordinary typesetting.

Now let us see the actual trend of tenantry as shown by government census records. In Texas, where this renter lives, 174,991 farms were operated by tenants in 1900, and 219,575 in 1910. Altogether six and a half million more acres were farmed by tenants in Texas in 1910 than in 1900. And tractors were being introduced all that time. I spent the summer of 1906 in Texas and saw the change taking place. Old ranches were being plowed up and put into crops, requiring more instead of less labor.

WHILE we have nothing to be proud of in noting this increase in tenant farming, the facts are indisputable. So to my tenant friend in Texas I must say this: From what evidence exists, tenants are not being forced to the wall, nor will they be. More land is being constantly improved, and that already under cultivation will be worked more efficiently and probably more intensively by means of tractors. There is strong evidence of Texas becoming a great dairy and market-garden State, offering employment to thousands who are qualified to do such work.

You are also proceeding on the theory that you can do nothing but follow a plow and farm in the old way. Permit me to say, with no intention of offense, that you are perhaps a trifle hard-shelled. I know I am, and lots of my friends are. We are satisfied in doing to-day's work just like yesterday's, without trying to learn new methods or conceive and develop new ideas. We ought to take lessons from some of the youngsters. I have just noticed in a Kansas newspaper the account of a number of high-school boys who intended to study veterinary science, but later changed their minds. Instead, they are preparing themselves to be expert tractor repairmen. They have decided to change their plans with the times. This is generally wiser than to try to combat a modern improvement which is both economical and efficient.

A change for the better in the course of a life need not be a radical one. It may be simply following the same occupation in a different locality. Or it may be selecting a special line in a broad field. A man may be a thoroughly good general farmer, but he may be a still better live-stock breeder. He may be a success as a fruit grower on a small scale, but his personality may make him still more valuable to himself and others if he becomes the manager of a large commercial orchard.

When things seem to be going badly in life, a good way to get a hold on one's self is to read the biographies of those who have managed to get ahead in various lines of farming, in the business world, and in public life. Note the decisions they have made and what those decisions led to.

And it is noteworthy that the biographies of successful men show how much they have been helped by reading about the lives of others.

Study, training, sound reasoning, and dogged persistence are all useful materials with which to build our lives, but the skillful handling of these materials by the master hand of another is often an inspiration which gives us fresh courage and helps us completely to realize our ideals.

If a new and efficient invention seems an enemy to our interests, we must endeavor to make it work for us, and thus benefit by its merits.

No, Mr. Renter, the tractor is not going to put you out of business. Instead, the farmers of the country, renters and owners alike, are going to come into a bigger opportunity and a greater prosperity because a new and a finer implement has been given them to work with.

The Editor

FARM and FIRESIDE

Published Twice a Month by THE CROWELL PUBLISHING COMPANY, Springfield, Ohio

Copyright 1917 by The Crowell Publishing Company

Vol. 40 Springfield, Ohio, Saturday, July 7, 1917 *No. 19*

Home-Grown Binder Twine

Fiber Plant Which Thrives in West is Superior to Sisal

By CHARLES CRISTADORO

QUOTED in Congress as an authority on this fiber plant, Mr. Cristadoro probably knows more about it than any other man in the country. He lives in southern California, where it has been grown as an ornamental plant for many years.

Mr. Cristadoro has sent a small quantity of the fiber to me. Samples of it will be distributed to subscribers free as long as the supply lasts. THE EDITOR.

THESE are busy days in Congress. And while the war program should rightfully precede all other business, the binder-twine situation is of more than common importance, for it is of international scope. At present we are practically dependent on Mexico for our supply. The recent speech of Congressman George M. Young of North Dakota, urging government encouragement for home-grown binder twine, is therefore a step toward our national welfare. The title of the congressional pamphlet containing the speech is, "New Zealand Flax, a Substitute for Sisal, Destined to Strike Down the Binder-Twine Trust." About ten thousand copies of the pamphlet have been distributed over the Northwest, and my purpose is first to give an outline of the statements made, and then enlarge on them so as to give you a general knowledge of the situation.

New Zealand flax, of which the scientific name is *Phormium tenax*, is a perennial plant growing from 10 to 14 feet high and, when uncultivated, yields from 15 to 25 tons of green leaves to the acre. The word *Phormium* is the Greek name for basket, and *tenax* means tough. So it is literally a tough basket material. And the leaves, because of their length, suppleness, and toughness, have for many years been used by natives for making baskets without any processing of the fiber.

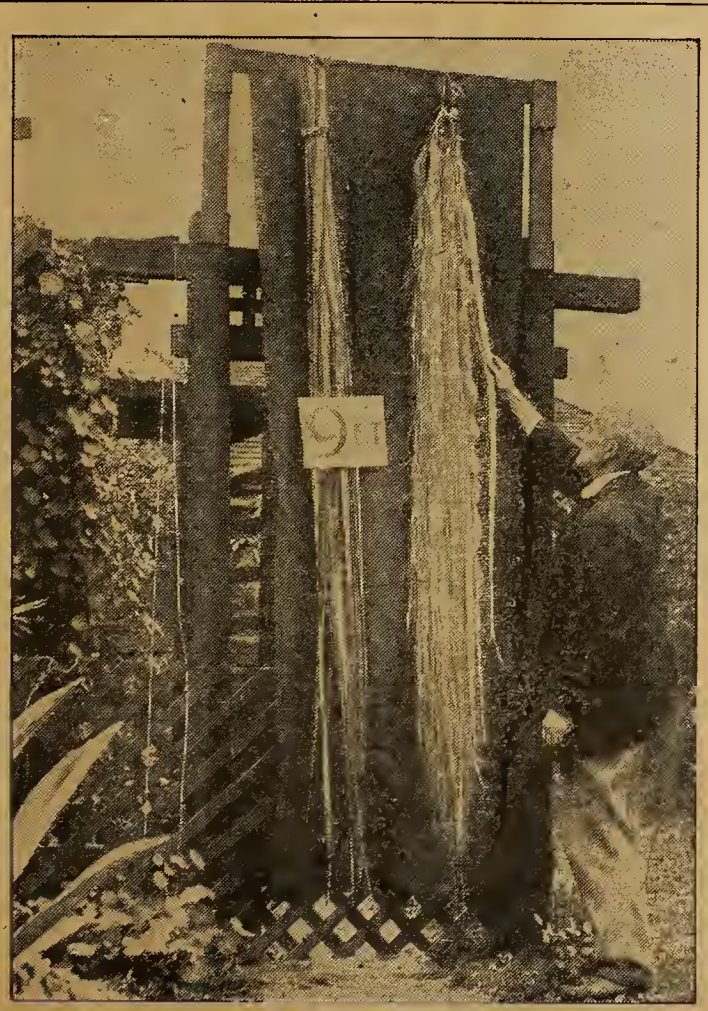
The New Zealanders have various processes for getting the fiber from the green leaves. The aboriginal Maoris scraped the leaves with a clam shell to secure the fiber, and more lately crude machinery has come into use. When the fiber has been washed and dried it is exported in small quantities to the United States for manufacture into cordage.

More lately it has been put under cultivation in New Zealand, and under favorable conditions will yield from 40 to 50 tons of green leaves to the acre. It will grow in the poorest soil, but must have a suitable climate, as it will not stand heavy frosts. It has been found to grow in this country wherever oranges and lemons will flourish. This makes it a plant especially suitable for southern California and Florida. It grows from crowns and also from seeds, but more quickly from the former. The crowns multiply freely, forming great clumps at the surface of the ground, sometimes five feet or more in diameter. On the exposition grounds in San Diego, New Zealand flax made a good growth in soil only a foot deep and underlaid with hardpan.

That it will grow abundantly in southern California is abundantly evidenced by the thousands of plants in parks and the lawns of fine residences. An American process of defiberizing the leaves was invented a few months ago, with the result that samples produced by this process are of strength and twine quality superior to Yucatan sisal, which is the fiber that has heretofore been chiefly used. The manager of one of the large harvester companies who examined and tested a sample of New Zealand flax fiber which I sent him writes: "We offer you nine cents per pound for 500 tons of New Zealand flax fiber, quality equal to the sample you furnished us. If these 500 tons prove to be satisfactory in quality, we are ready to follow it with an order for 10,000 tons at a price equal to that of Yucatan sisal. We hope you will succeed in interesting the farmers of your State in the cultivation of this plant. If, as appears probable, it will grow successfully in California, it will certainly become a very profitable crop. You need have no fear regarding a permanent market. The United States uses in the manufacture of cordage more than a thousand tons of this type of fiber daily, and the consumption is increasing a lot every year."

A two-years growth of New Zealand flax from a crown. The plant is a perennial

In the Imperial Valley, under the forcing desert sun, with rich soil 100 or more feet down, and with irrigation from the Colorado River, nobody really knows how many tons of leaves an acre of *Phormium* will produce. One nursery expert who has worked with the plant for twenty-five years says that on a very conservative basis an acre of Imperial Valley soil will yield 60 tons of green leaves annually, but he hesitates to make a statement of maximum yields lest his veracity be questioned. Compared with henequen, which is the source of sisal twine, New Zealand flax is longer lived, twenty times more productive per acre, and, except for irrigation, requires no more care.



Showing samples of freshly cut leaves (left) and fiber (at the right), grown in California

The New Zealand process for converting the leaves into fiber is such that the cutters must not harvest any more leaves than can be processed on the day they are cut. This is a great drawback to the manufacture of the fiber in New Zealand. The American process, which is a combined chemical and mechanical one, is very rapid and continuous. The freshness of the leaf apparently makes no difference. A leaf several months old and as dry and hard as sole leather yields its fiber as readily as a newly cut leaf.

This enables the crop to be cut, stored away like hay, and shipped to the processing mill at the convenience of the grower. A ton of green leaves will yield between 300 and 400 pounds of fiber, depending on the quality, which in turn depends on the conditions under which it is raised.

The cost of processing from the leaf to the baled product is about 1¾ cents a pound. In strength *Phormium tenax* has a breaking strain of 23.7 pounds as compared with 11.75 for European flax, and 16¾ pounds for hemp. The crown requires two years in which to produce a crop, and from that time the growth becomes stronger and stronger if the crop receives sufficient water. While it will grow in dry soil, New Zealand flax makes its best growth under irrigation, or in soil that is naturally moist but not marshy.

Mr. E. A. Wilson, formerly assistant manager of one of the largest flax mills in New Zealand, has this to say about the culture of the plant after it is once well established: "Flax grows in comparatively poor soil. Of course, if it has rich soil you will undoubtedly get a better yield, but the principal requisite of flax is water.

"You cannot kill flax by cutting it. You select the mature leaves and in a little while after you have cut out the flax ready for milling you can go over the plant again and cut out other leaves. It is all the time growing. The time between cuttings depends a great deal on the way it is cut. If it is cut properly, the time is only a matter of eight or nine months, or possibly a year. I think the system which will probably be adopted here in this country will be to divide the acreage in sections and cut them in rotation."

Methods of planting the crowns must be worked out to suit local conditions. A plant consists of a number of small separate plants which we call crowns. In the wild state we get as many as 40 or 50 crowns to a plant. I would suggest planting from 10 to 12 crowns to make one plant, placing them 10 by 10 feet, as each plant covers a large amount of ground, and about every sixth row make a road 12 or 15 feet wide, for convenience in getting the crop out.

Chiefly a Problem of Production

THE binder-twine situation is one which I believe will be finally settled by Congress acting in behalf of the people. It is not a matter for the federal court, for while courts may pass judgment on the binder-twine monopoly, such action will not produce the twine or the fiber which we need so badly. The most practical way in which farmers can help is to write Congressman George M. Young, the Capitol, Washington, D. C., stating their interest in the matter and urging the importation of several shiploads of crowns of the New Zealand flax. He will make good use of such letters.

Even should a verdict be finally rendered against the sisal monopoly, it will give rise to little or no surprise, nor will the monopoly be greatly concerned. Home-grown binder twine is the best verdict that can be given, and the only one that will permanently settle the matter.

The most effective means of making the United States independent of the sisal monopoly is, in my opinion, to import several hundred tons of the New Zealand flax crowns and distribute them among growers living in the proper climate for growing them. In three years the United States can begin to compete with the sisal monopoly, and in four or five years drive it out of the American market.

The distribution should logically be made by the U. S. Department of Agriculture in a manner similar to the introduction of durum wheat, which soon became a profitable and standard crop.

E-W

Farming Forty Acres

Alfalfa and Dairy Cows Earn Cost of Modern Comforts

By FRED L. HOLMES

FOR twenty-three years, F. F. Showers of Walworth County, Wisconsin, was a school teacher. Then he bought a 40-acre long-tilled farm in one of those older settled portions of southern Wisconsin and started to work. He has made this little farm such a success that others may profit by his experiences.

His cows have made him a net profit of $72 a head in a year. He has made nearly $100 profit in a year on each acre of alfalfa. And he has found enjoyment in his work. "Study your fields; harvest your crops on time; encourage your herd, and produce only the best." This is the homely philosophy born of his small-farm experiences.

Not only has he made money, but he has also improved the old farmhouse, made it so pleasant and comfortable that his wife and family enjoy all the city-home comforts. There is contentment in this home.

"If you are thinking of joining a labor union so that you will have but an eight or ten hour working day, do not think of trying to operate a small farm," commented Mr. Showers in telling of his work. "To succeed in farming you must so enjoy your work that it becomes a pleasure instead of a task.

"In fact, success in farming depends upon the man who runs the farm. For if he thinks enough of his problem he will succeed no matter what lines of farming he may pursue.

"Utilize all the farm. I study each field so that I know what crop it will produce to best advantage. A farmer must do this on a small farm, since it is necessary to utilize all the corners of the farm.

"Make the soil productive. If my soil is acid I use lime. If my field is wet or poorly drained, I tile it. A farmer can fertilize the field, plow it, prepare the seed bed as it should be prepared, and get the soil in the best condition for plant food and the maintenance of the moisture.

"The farmer on a small farm must raise crops which are best adapted for his soil and from which the best returns in milk, pork, beef, or whatever you have to market can be secured. Often the surplus roughage or hay can be sold and feeds bought which will produce more milk or meat than this hay or roughage would have done.

"I found that I could grow alfalfa on my farm and get good returns. I made a study of the plant, found that it needed a well-drained soil, and that it required a well-prepared seed bed. I knew that I had a well-drained soil and that it was necessary for me to supply the seed bed. The farmers who drove past stared at me when I harrowed and harrowed the field I was preparing for alfalfa. I went over the ground eleven times, until it was as mellow as a well-worked garden.

"Sweet clover was growing three or four feet high along the roadside, so I inoculated my alfalfa field with the soil in which clover had been growing. The stand did not satisfy me, so when I planted my second field I fertilized the field before plowing it in the fall, disking and harrowing in the spring.

"My first field yielded five tons to the acre, but it did not satisfy me. I bought a lime sower and ground limestone, and inoculated with soil from the old field, at the rate of 500 pounds of soil to 2,000 pounds of ground limestone. I sowed 20 pounds of alfalfa and 20 pounds of barley to the acre. Because of the thorough preparation of the seed bed, the barley yielded 40 bushels to the acre.

"Upon this field last year eight tons of alfalfa hay were cut from every acre. My profit was $98.40 an acre, after deducting the interest on the land at $200 an acre, the taxes, the cost of plowing, disking, planting, fertilizing, and liming, besides the expense of cutting, raking, cocking, capping, shaking out, and hauling the hay.

"In curing alfalfa, to get the largest return I cut the hay as soon as the dew is off in the morning, and start tedding so that I can cock and cap the hay in the afternoon. About three o'clock the alfalfa is raked into windrows, carefully cocked—not tumbled—and then capped. I leave the hay in the cock for eight or ten days, depending on the weather. The cocks should be moved about so as not to kill or weaken the plants under them. Then the cocks are opened up, but not scattered out, and the hay placed in layers so that the leaves do not become brittle and rattle off. An hour or two later I begin putting the hay into the mow. It is surprising how the alfalfa retains its color until it is thrown out of the mow.

"Home-grown feeds are not always cheapest and best. I try to run my farm as the best business men run their business. A good business man would not feed his cows hay just because it happened to be on hand, if he could sell that hay and buy another feed which would produce more milk. Last year I sold $300 worth of alfalfa and purchased feed valued at $296.95. I did this so I could have a balanced ration, and I know my cows relish a change in their feed.

"I manage my herd carefully. I try to make each cow as comfortable as possible. I give her a soft bed, plenty of bedding, curry her, and speak to her kindly. I find that these things increase the dividend from my milk pails.

"I make a difference in the amount of feed I give to a cow weighing 1,000 pounds and one weighing 1,200 pounds. Reason shows me that although the larger cow may not produce the largest amount of butterfat more feed is required for her maintenance. I think that the secret of success in the dairy business lies in the worth of the individual cow. I know it is possible and profitable to have one head of stock on each acre. My silo and my alfalfa fields have helped me to unlock the secret of money-making on the small farm."

The alfalfa is put into cocks and left to cure, which requires from eight to ten days

But the money measure of this farm success is not alone the criterion. Mrs. Showers has co-operated with her husband from the beginning. When they bought the little farm she asked that the house be remodeled and that the farm be given a suitable name that would mean something to future generations. So they called it "The Manx," in honor of her father, who was born on the Isle of Man.

"Our home shall not simply be a lodging house in which we live while we make money to buy more land to feed more cattle and hogs," said Mrs. Showers in describing her feeling for desiring a better farm home and in explaining why all farms should have better homes. "It is high time the husband co-operated with the wife and daughter in this matter. When I give you the figures on the cost of installing the modern conveniences we have in our home, I am sure you will agree with me that many can afford to expend the necessary amount of money when the results are taken into consideration."

The porch of the old house was beautified by boulders from the field, the floor of it being made of cement sloping toward either corner to drain. Many windows were provided in the house to insure plenty of fresh air.

A furnace, hot and cold running water, including soft water, two fireplaces, bathroom, cesspool, gas machine for lighting the house and barn, laundry, built-in cupboards, and the inside of the house carefully and well painted inadequately describe the conveniences installed in the Showers' home.

Running water was obtained by a contrivance on the windmill, which automatically fills the pressure tank located in the house basement. A storage tank in the haymow provides soft water.

The bill of expense follows:

Five tons an acre wasn't enough, so last year he added limestone and cut eight tons

Light and gas fixtures, including gas machine, all piping, gas stove and all fixtures	$262.47
Pressure tank, 30-barrel tank in barn, digging of trench from windmill to house, pump at mill, piping, laundry, bathroom and kitchen equipment complete	295.00
Installation of furnace with all pipes and registers	135.00
Two fireplaces, including grates, tile, cement, and labor	31.50
Total	$723.97

This 40-acre farm has made money, furnished a desirable home, and given its owners a life crowding with new enjoyments.

"Success in farming depends upon the man who runs the farm" is the philosophy wrought out of experience by Mr. Showers.

America's High Duty

By JOHN COLEMAN

AMERICA is in the war, and only one outcome can be considered possible by Americans. That is victory. To achieve victory the country must furnish the sinews of war. With victory will come peace, and therefore each purchaser of a Liberty Loan Bond may be considered an agent of peace. A certain dignity attaches to money invested in such a high and noble cause as ours.

The Liberty Loan was made by the United States Government to purchase arms and equipment for American soldiers and sailors, food and supplies for the American Army and Navy. The money is being spent in America for those Americans who are fighting America's battles on land and sea.

Part of the money raised by the sale of Liberty Loan Bonds has been loaned to our allies; this too is being expended in America. It will be spent for food and supplies for the armies of our allies fighting on our side on the various war fronts in Europe. It is America's first contribution towards doing her part in the war we are engaged in. It is billions for defense in the world-wide war Autocracy is waging against Democracy, but not one cent for tribute.

Not all can fight, not all can render personal service in other ways, but those who are denied the privilege of serving their country in person have the privilege of serving her by lending their money to win her victories.

But it is not patriotism alone that urged the buying of Liberty Loan Bonds. Thrift and a wise economy in investing small savings commended these Liberty Loan Bonds to small investors. They are safe and, considering their tax-free quality—free from all federal, state and local taxes (inheritance taxes excepted) and free from any war tax that may hereafter be levied, affording an absolutely net income of 3½ per cent—they constitute an ideal investment for savings.

One aspect of the Liberty Loan of 1917, that the farmers of America may well consider, is that a very great portion of the money raised by the bond issue will come directly to the farmers of the nation.

All of the money advanced to our allies will be expended in the United States, and as they are making all their own munitions, practically all the money advanced them will be spent for products of the farms—for cotton for clothing and high explosives, wool for clothing and leather for shoes; but by far the greater part of the money loaned our allies will be expended here for food products.

In a few months the United States will have under arms 1,200,000 men and 500,000 reserves in training; so, including the navy, there will be 2,000,000 men that our Government will feed and clothe. This will make the United States Government by far the largest customer the farmers of America have.

The Secretary of the Treasury has employed such methods in handling the loan that no community has been denuded of money by reason of Liberty Loan Bond purchases. The money has been left in local banks, and as the Government purchases food and supplies the money raised by the bond issue will pass back to the people.

E-W

Making the Most of Earth Roads

Proper Drainage the Greatest Factor in Good Dirt Highways

By M. N. HARRISON

A good job of grading has changed the reputation of many a bad highway

"ROAD maintenance is like milking and other chores," asserts W. S. Gearhart, Kansas state highway engineer. "It must be done over and over again, and it cannot be neglected without permanent loss."

The hard smooth road which is the dream of every farmer can be attained even in the case of earth roads, if the road is well made to begin with and if persistent and intelligent attention is given to maintenance.

"Practically all the work done on an earth road, except reduction of grades, correction of horizontal alignment, the building of drainage structures, and the elimination of railway grade crossings is temporary, and should be considered maintenance," says Mr. Gearhart.

"Doing permanent work is a comparatively easy matter, for when once done, if it is done correctly, it will last for a number of years. The maintenance of an earth road, however, is a never-ending job.

"For this reason the earth road has a bad reputation. The trouble is not so much with the material of which the road is composed as with our system or lack of system of management. Other types of roads when treated as we treat the earth roads are much more expensive and serve the traveling public little if any better."

According to the Kansas road engineer, the improvement that can be made on our present earth roads by intelligent direction and construction and maintenance is little realized by the public, and the serviceability of a properly maintained earth road is not appreciated when compared with other types of roads as to cost of construction. Successful construction and maintenance of any kind of a road depends upon the recognition by the public and the builders of a few fixed and fundamental requirements.

That one practical, well-paid road builder should be made responsible for the upkeep of a certain section of road and should be employed throughout the year, his tenure of office dependent entirely upon the character of services rendered, Mr. Gearhart recommends as one solution of the problem.

"The graded portion of the road should be elevated and crowned so that the water from every section of the road surface will flow into the side ditches," he says.

"The road should have a ditch along each side large enough to carry off the water. These ditches should have a continuous fall from the highest point to the outlet, and outlets from the ditches and all culverts into the fields and natural waterways should be provided whenever possible, in order that the water may be drained away from the roadway. Both the construction and maintenance should be timely."

Drainage is the prime essential in all road maintenance, but it never will be adequately provided for until men who appreciate its importance and who know how to drain the roads are placed in charge of the work. In describing how to secure good drainage Mr. Gearhart makes these definite suggestions:

"The proper width for a highway depends on the kind of soil, the amount of traffic, the drainage and topography of the adjacent fields. Under normal conditions 25 to 30 feet between the centers of the side ditches has proved satisfactory, but in low, flat country, or where the drainage is not good, the width should be increased in order that the traveled portion may be raised a sufficient amount above the side ditches to drain the road surface thoroughly without making the traveled portion too steep. On heavily traveled roads and where the drainage is poor a width of 35 to 40 feet between the centers of the side ditches will be more satisfactory.

"Such a width will make it possible to maintain the 18 or 20 feet of traveled surfaces with just enough crown to shed the water, and will give a good, convenient surface to drive upon. The fall to the side ditches then can be obtained between the center of the side ditches and the edge of the traveled portion. If the road is narrower and has to be raised considerably above the side ditches, the traveled portion becomes so steep that it is difficult and dangerous to drive upon.

"In the construction of new roads it is always advisable to make them as narrow as practical in order that as large a mileage as possible can be constructed at one time. Then, as the traffic increases, the road can be widened at a small cost. On local roads a width of from 22 to 25 feet between the centers of the side ditches will be satisfactory.

"The depth any road should be crowned depends upon the character of the soil, and the width and the location of the road. Each portion of the road is a special problem in itself and should be treated as such. In general the traveled portion of a clay or loam soil should be crowned from three-fourths to one and one-fourth inches per foot, while in sandy soil a crown one-half to three-fourths inches to the foot is ample."

The only object in crowning the road is to cause the water which falls upon the surface to flow to the sides easily and without doing any damage. To prevent the surface from breaking through and the frost from disturbing it, the traveled portion of the road must be raised so that the surface will be well above the ground water.

"The side ditches should be made wide and flat instead of V-shaped, to reduce the erosive action of the water," says the expert. "Sod will form in flat ditches and the grass will retard the flow of water. The outside of the ditch should be sloped off to prevent the sides from falling in and filling the ditch. The outside can be made easily if the cut is not more than three feet deep, by placing two wheels of the grader in the ditch and the other two on the bank, and setting the grader blade at 45 degrees.

"These side ditches should have a continuous fall from the highest point to the lowest point or outlet. Outlets should be provided as often as possible so as to take the water off the roadway. Special attention should be given them, as water is often found in pools along the side ditches, when if a true grade had been maintained or outlets provided the bogs and mires would have been avoided and the otherwise well-made roads would be excellent highways of travel."

Mr. Gearhart believes that road maintenance work can be timely if the patrol system or section system is adopted, where one man is given charge of a section of highway and devotes all his time to the work on this one section.

In highway work, as in other construction work, he has found the contract system has its advantages, inasmuch as the work is done at the proper time, the improvement entirely completed, and the work finished at a fixed price. There are, however, some serious objections to the contract system, for it is difficult to state in specifications just what the contractor is expected to do.

Poor crowning and lack of outlets for side ditches mean muddy pools and mires

A well-constructed culvert may be a thing of beauty as well as contributing to the safety and comfort of those who drive over it

My Notebook

By EARL ROGERS

I HAVE two important pockets in my overalls. One holds a jack knife and pencil, the other a notebook. A farmer can't very well farm without a jack knife, and I can't very well farm without the notebook.

This notebook isn't a costly affair at all. I just take a dozen sheets of paper or so of the 8x14 size and double it twice. Cut the edges and take a couple or three stitches—big ones—in the crease. There's the notebook. They get dirty too quickly to use a good one.

Then I divide it up into parts. In the front I just jot down any old thing that comes to me while I am working. In the middle I start another part. These are the things I want to do or buy the next time I go to town. You know it's pretty handy when the rainy day comes along to be able to find the things all noted down that you wanted to do at such a time. With me, and I don't believe I'm much different than other farmers, I can't always remember everything that I want to just when I want to.

Then, maybe, you are going to make a talk before the grange or farmers' picnic. The ideas come a lot better while you work, but unless you can get them down in black you easily forget all you wanted to say.

A good many times we farmers have to pit some potatoes or store some corn. By jotting the number of bushels down that went in the pit we know just what to figure on the following spring without waiting until we open the pile and measure them up. Some farmers can always remember these things. I can't.

Maybe you've tried a little experiment with fertilizer on some corn rows. The note will tell you just which row was fertilized when you want to know next fall.

THEY like Firestone Tires in New England. Where the successful tilling of the soil represents a constant struggle of scientific effort with unfavorable conditions, farmers appreciate the way Firestone methods hold out against road wear and tear.

New England is not easily convinced, but once for Firestone always for Firestone as long as Firestone standards continue. Your dealer and the nearest Firestone Branch unite to give you service.

New book, "Mileage Talks" No. 145, sent free on request.

FIRESTONE TIRE AND RUBBER COMPANY
Akron, Ohio — Branches and Dealers Everywhere

Firestone

FARM and FIRESIDE

The National Farm Paper

Established 1877

Advertising Rates

Agate Line, Both Editions		$2.75
" "	Western Edition	1.50
" "	Eastern Edition	1.25
Quarter Page, Both Editions,		$550.00
" "	Western Edition	300.00
" "	Eastern Edition	250.00
Half Page, Both Editions,		$1,100.00
" "	Western Edition	600.00
" "	Eastern Edition	500.00
Full Page, Both Editions,		$2,200.00
" "	Western Edition	1,200.00
" "	Eastern Edition	1,000.00
Double Spread, Both Editions, Black and White,		$4,400.00
Double Spread, Both Editions, Black and Tint,		$4,450.00

3% Discount for Cash

Cover positions and special positions sold at page rate for both editions only, and not subject to cancellation.

Forms close three weeks before publication date.

Orders stipulating position other than preferred not accepted.

Single column, width, 2¼ inches; double column, width, 4 3/16 inches; triple column, width, 7⅛ inches; four columns, width, 9¼ inches.

Column length, 200 lines; four columns to a page.

Closing date, Saturday, three weeks before publication.

FARM AND FIRESIDE

N. Y. Office
381 Fourth Ave.
New York

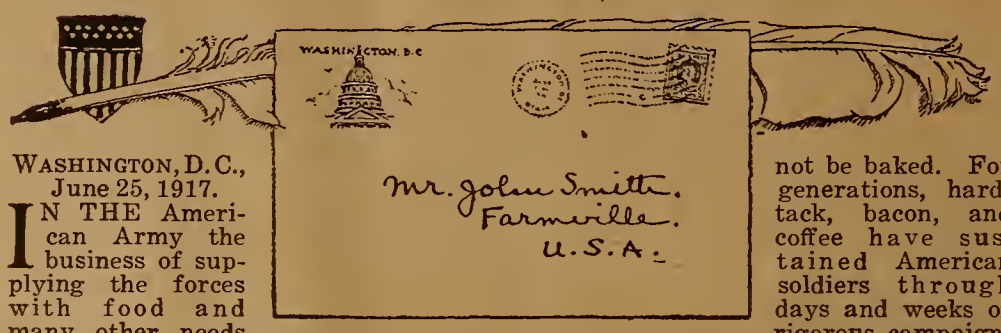
SPRINGFIELD
OHIO

Chicago Office
1316 Tribune Bldg.
Chicago

Feeding Our Army

Fighting Men Assured Wholesome Rations

By JOHN SNURE



WASHINGTON, D.C., June 25, 1917.

IN THE American Army the business of supplying the forces with food and many other needs devolves on the Quartermaster Corps, of which Major-General Henry G. Sharpe is the head. This corps was formed in 1912 by the consolidation of the subsistence, pay, and quartermaster departments.

On the Quartermaster Corps rests the tremendous responsibility of providing the army with food, clothing, horses, transports, and nearly every kind of material and supplies, save medical supplies and that which relates to actual fighting, such as rifles, guns, and munitions.

Back in 1898, when the commissary service, the transportation service, and the medical service failed and broke down, the country had its ears filled with the embalmed-beef scandal and other complaints. The conditions then were not such as to make a patriot proud. But since, there has been development in the army in many directions, and nowhere more than in the food-supply service.

Some folks who never served in the army, who never knew the glad notes of the bugle sounding the call to mess, have an idea the army ration is rather poor provender. But this is a mistake. The soldier in camp or garrison, according to official orders, is entitled to this daily allowance of food or the equivalent of it: Fresh beef, 20 ounces; flour, 18 ounces; beans, 2.4 ounces; potatoes, 20 ounces.

In addition to this there are prescribed liberal allowances of coffee, sugar, evaporated milk, prunes, vinegar, lard, butter, syrup, lemon extract, salt and pepper. If the soldier in garrison or camp doesn't get these articles in the prescribed amount, he is entitled to substitutes of a wide variety set forth by regulations.

This ration amounts to about four pounds of food. When troops are actually in the field and marching and campaigning, they do not have so liberal a ration. The food allowed then is what is known as the reserve ration in addition to such other food as can be obtained. The reserve ration consists of 12 ounces of bacon or 16 ounces of canned meat; 16 ounces of hard bread; coffee, sugar, and salt. The regulations say the field ration, which is the food allowed in actual campaigning, is the ration prescribed by the commander of the field forces, and consists of the reserve ration in whole or part supplemented by articles of food requisitioned or purchased locally or shipped from the rear.

Troops of a great army when on the march are pretty apt to forage what they can get, and in a rich country the adept forager is likely to live on the fat of the land. In this war there won't be much foraging, because Europe is too badly stripped of food to make it possible to sustain armies in any way except to ship foodstuffs to them from the rear.

IT WILL be seen from scanning the army ration that the garrison ration is ample, while one can subsist on the field ration indefinitely without difficulty. A good ration is more valuable than medicine in keeping an army in health. The time is past when food for any army is looked on as simply so much provender to keep men from starving and complaining. A man sick is one man less for use if the army goes into battle. A man well is an asset, and a man ill is a burden.

One of the reforms effected in the army since 1898 has been to develop a force of skilled army cooks and bakers. The army has six cooking schools in different parts of the country, and also schools for bakers. A new army cook-book and a new manual for bakers have been prepared. The subject of bread-baking has been studied with great care. A variety of field bread is baked which can be preserved two weeks and still be well kept and palatable.

It is sometimes said that hardtack has been abolished in the army, but this is not true. It is still utilized, especially in campaigning where fresh bread cannot be baked. For generations, hardtack, bacon, and coffee have sustained American soldiers through days and weeks of rigorous campaigning. They are still one of the main reliances of the army in the field, but ordinarily the soldier does not have to depend on them for more than short periods.

Another advancement in the feeding of the army is in the inspection of the foodstuffs. Trained veterinarians inspect meats for the commissary. Inspections are made both at depots and in the field. The same care is taken with other products.

Indicating the improved conditions of food supply, a leading officer of the Quartermaster Corps states that in an inspection on the Mexican border, out of thousands of loaves of bread baked in the field there was only one complaint.

ROLLING kitchens, which are moved on trucks, field bakeries which are often pushed close up to the firing line, and a new field range which also can be used at the front are among the recent army improvements. One type of range weighs 264 pounds and will cook for 150 men, an infantry company. The commissary experts of the army have developed, also, a tourist cooking arrangement, so that when troops are being moved on trains they can be served hot meals.

Not only bullets and the diseases commonly known as diseases of the camp are crippling to armies, but another disease called nostalgia also weakens them. Nostalgia is plain, old-fashioned homesickness. There is no homesickness like that of the youth never before away from home when he finds himself in a foreign land, with the enemy in front and the ocean in rear and no knowing how long it will be before he sees the folks again—if he ever does. A good, hot meal, right off the field range, served by a sympathetic army cook, is a powerful sedative even for homesickness such as that.

The War Department reckons the cost of feeding a soldier at 30 cents a day—a figure too low in view of high prices. Anyhow, at 30 cents a day it will cost the Government $300,000 a day to feed the troops. This means $9,000,000 a month, or $108,000,000 a year. This is simply for foodstuffs alone.

At the rate of four pounds of foodstuffs a day for the soldier, which is the ration for camp or garrison, 4,000,000 pounds will have daily to be provided for the troops. This is something of a task. Of fresh beef alone there will be call for 1,250,000 pounds. The army will drink 35 tons of coffee daily. Two huge trainloads of foodstuffs will be required each day to carry the provisions for the force in question. Think of furnishing the meals for a great moving city of a million people, or of provisioning a thousand or more great circuses, and you will have a better idea of what feeding the new army means.

These figures just given are for feeding the officers and men. They do not take into account still another task imposed on the Quartermaster Corps. This is the feeding of the thousands of horses and mules which will be used for the artillery and cavalry and various forms of transportation.

The feeding of all these forces while they are on transports will in itself be no small proposition. In France, for the feeding of the American Army, there will be established a number of supply depots, a safe distance back of the fighting lines, fifteen or twenty miles or more, as conditions demand. To get the foodstuffs from the supply depots up to the battle front, over shell-swept regions, involves toil, bravery, and real brains. No excuses go. The troops on the firing lines must be fed.

When the lines at the front are stationary, the difficulties of food supply are heavy enough. But if there is a drive, and hundreds of thousands of troops advance long distances and over a broad front, where the roads are wiped out, these difficulties are multiplied. For Quartermaster-General Sharpe and the force under him it will be a supreme test.

E

Farm of W. B. Barney & Son, Hampton, Iowa

Why Goodyears Are Preferred

There are well over 200 different makes of automobile tires manufactured in this country.

And the companies that produce them exercise as many different business methods in behalf of their product.

Yet despite this extensive competition, one car in every five now in service is equipped with Goodyear Tires.

And more Goodyear Tires are sold in America than any other brand.

We offer this information not in any boastful spirit, but merely to show the overwhelming preference for Goodyear Tires.

We know, and you know, that this preference could not exist if Goodyear Tires were not *plainly superior* to ordinary tires.

But it does exist — a plurality of American motorists *does* prefer Goodyear Tires.

And what is more important, their preference is growing more pronounced with every day.

The margin of Goodyear leadership is steadily widening.

This fact, alone, means all to you that can be said of tires.

It means that throughout this nation, wherever tires are used, Goodyear Tires give maximum service and satisfaction.

It means that they give greater mileages than other tires, deeper comfort, surer security, stouter endurance, more freedom from trouble.

These are the cardinal elements of satisfactory tire service, and these are the elements in which Goodyear Tires excel.

Ask your neighbor who uses Goodyear Tires what he thinks of them.

He will verify every virtue we have mentioned—that is why he prefers them.

Sometime, *you* will come to Goodyear Tires. Sometime, *you* will prefer them.

When you do come to them, buy them of the Goodyear Service Station Dealer near you.

You can deal with him face to face; he is there on the ground for your benefit, to help you get out of Goodyear Tires the final mile we have built into them.

Ask him about Goodyear tubes—*better* tubes—get him to tell you how much they mean in lengthening a casing's life.

And ask him about the Goodyear Tire-Saver Kit, which, as a primary factor in tire conservation, certainly deserves a place in your car.

The Goodyear Tire & Rubber Co., Akron, Ohio

GOODYEAR
AKRON

E-17

FARM and FIRESIDE

THE NATIONAL FARM PAPER

Harry M. Ziegler, *Managing Editor*

Associate Editors:

D. S. Burch B. F. W. Thorpe Ruth M. Boyle

Published Twice a Month by

The Crowell Publishing Company

Springfield, Ohio

GEORGE H. HAZEN, President

Executive Offices: 381 Fourth Avenue, New York City. Branch Office: Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

H. J. Brown, Jr., *Business Manager*

D. W. Henderson, *Advertising Manager* L. V. Rodda, *Circulation Manager*

Subscription Price

One year (24 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents a year.

About Advertising

Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.

Advertising rates and regulations furnished upon request.

July 7, 1917

Pro-Harvest Preparedness

IT IS a comparatively easy matter—on paper or on the public platform in the flush of patriotic enthusiasm—to double or treble the production of our nation's food supply and that for our stock for the present season. Quite another thing is to compel Mother Earth to deliver the goods.

In order greatly to increase our country's crop production at harvest time, there must be a concentration of thought and skilled effort for very definite ends. Mere increase of acreage seeded will fall far short of the mark. Many new to farm craft this season are undertaking field and garden-crop production. All these must be influenced to understand that the best expensive seed and much costly labor will largely go for naught unless there was the required preparation of soil before seeding and there is abundant plant food to push rapid development of the crop. Then must follow intensive tillage for the cultivated crops to destroy weed robbers, conserve moisture, and to encourage the friendly soil germs to cooperate in furnishing their nourishing bacterial "broth" for the hungry plant roots. Nor for a day must it be forgotten that the crop enemies—insect pests and plant diseases—can in the space of a few days change a promise of crop success into dire failure.

A fat harvest will do much to hasten the day when we can realize our country's desire for uninterrupted peace and stable prosperity when war shall raise his cruel head no more. To this end let us all lend a word of suggestion and a hand of help to those who are new in the road to farming success.

The Road Upkeep

MANY road officials seem to believe that the building of a good road completes their job. This fault is especially apparent in the management of macadam roads, which often are neglected until they become so desperately bad that it is expedient to remake them entirely. And this fault is only to a slightly less extent true where gravel, sand, clay, and earth roads are concerned.

We must learn, if we are to have the most miles of the best roads for the money we spend, that the principle expressed in the old adage "A stitch in time saves nine" applies to roads as well as to other human affairs. Even the most superficial of road observers will hardly deny this truth.

However, when the public protests, or criticizes, or offers suggestions, it too often harks back to the little piles of mending material at intervals along the roadside in France and Germany, and to the picturesque peasant of Europe with his wheelbarrow and shovel. And yet, if we may believe testimony that comes from Massachusetts, Connecticut, and Illinois, the split-log drag can be depended on to replace the barrow and the shovel. And it also removes the much-talked-of handy piles of material, for the drag gathers as it goes along the material needed for the patching. Moreover, if we correctly understand the art of road-dragging, the drag repairs the holes in the road before the holes become of sufficient importance to warrant attention from the slower and more expensive shovel and wheelbarrow. Thus the drag would seem to be more efficient in addition to being the more economical procedure for maintenance.

New Ways of Thinking

HABITS cut a deep channel in a man's life. Ways of thinking that have been followed for years take us captive. It is not easy to break the power of an old habit or to take up new ways of thinking. We have come to a time when the farmer must think along new lines, whether he would have it so or not.

"Speed up," "Be more efficient," "Take hold of life on the hurry side"—these are the slogans of our day. The farmer hears the cry and wonders what it is all about. Before he knows it, something grips him and he is tossed out into the rush and the hurry and the "hurrah, boys!" like a feather whirled by the wind.

And the farmer is equal to the new demands that are being made upon him. He never has failed when the world needed him; he never will. Out of the quiet of the old days he is coming. He is tightening up his belt and taking a firmer grip on the tools of his daily labor. With steady eye he looks into the face of the storm that is surging over the nations. He feels the smart of the world's hurt.

The bitter cry of the starving little ones across the sea rings in his ears, and he sets himself earnestly about the task of doing his bit to make the world's suffering less. He will do it, too, for he knows what men in other professions have never as yet learned, that all the talk about forcing Nature to do more and better work is wrong; that Nature gives all and gives her best to him who is ready to receive it and who takes what she gives with thankful heart. So will the great need of mankind be met, and met soon.

Let the Bees Help

HONEY is one of the most wholesome of foods, and the busy little workers who manufacture it from the flowers ask less than their board for all the work they do. Given a fair chance, a few stands of bees will provide an ample supply of one of the best sweets, and there will also be a large surplus for sale.

At present sugar prices, and with the prospect of further advances, the housewife is directly interested in reducing sugar purchases to the minimum. One way to do this is to provide a supply of honey.

There is a still greater part that bees play in the solution of the food problem. In gathering the pollen, bees aid in bringing about the fertilization necessary for abundant crop production. In greenhouses, where certain crops are grown under glass, experiments have shown that the presence or absence of bees had much to do with the increase or decrease in yield.

The many hundreds of bumblebees harvesting their supply of honey from the clover blossoms add to the yield of hay. The fruit grower delights in hearing the hum of bees among his vines and trees when the blossoms burst forth.

Feeling Better

Our Letter Box

A Temporary Fruit House

DEAR EDITOR: In the crop rotation we have found it wise to locate our strawberry and raspberry plots from 50 to 60 rods from the regular packing shed near the rest of the buildings. This, we have found, is too far to handle fruit of the perishable nature of strawberries. Hence of late we have been using a temporary shed.

This is made of anything handy around the place. For four uprights we use heavy rails. Possibly they are too long sometimes. If so, let them stick up into the air. There's no need to cut them for a shelter of this sort. We sink them a foot or so in the ground, brace them a little, and fasten the four together with some more rails. Then, on top, we lay 10 or 12 inch boards. These are nailed a little to the plates, across the upright rails. On top of this is laid tar-paper roofing. Two rolls will cover plenty of space. Instead of nailing this on the boards we lay three or four boards across the top of the roofing and nail these boards to the roofing boards.

For the protected part of the shack we have a bench made of three horses topped with three 10-inch boards. On the other side of this shack are the crates of quart boxes and a few bushel and 24-quart crates. A brush or whisk-broom, a hammer and nails, and a box to keep the tickets in complete the equipment.

Each day after the wagon comes from the market it is driven to this shack and unloaded. That leaves the necessary amount of crates on hand for that day. The wagon is left by the side of the shelter till the picking is done. Then the berries and tickets are loaded into it and taken to the regular shed.

Water is provided for the workers. They like the saving of time that is effected by this closeness to the work. Consequently, they are able to do more work with less fatigue than they could otherwise.

One person is able to handle the packing and ticketing of berries picked by from ten to twenty boys and girls, and not overwork. If there should be too much work for one, the berries are set aside in the shade until there is more time or more help to put them away.

The expense of this building is probably $3 a year. The size is about 10x12 feet of working space. The time saved is hard to estimate, and the good feeling among the workers is harder yet to determine financially, though it is a lot. And on the hot, tired days, when everyone wants to quit, every bit of energy saved in steps means dollars in fruit not left on the vines, where it would probably spoil before the next picking could be made. R. E. ROGERS, Ohio.

Against Consolidation

DEAR EDITOR: I don't agree at all with the views expressed by Judson C. Welliver in his article on consolidated schools. During the greater part of the winter the weather is unfit for children to ride three miles or more, and there are a great many communities where the roads are so rough that grown people cannot keep robes over them, much less children.

Then what time would children have to be up in order to ride three or four miles and reach school by nine o'clock? What time would they reach home when it is almost dark at five in winter? How are they to reach the stations in cold weather? They would be cold by the time they reached the station, and if the carrier was no more punctual than the mail carriers are, they would freeze waiting for him.

As our school system is, parents can go after the children if the weather is bad, and they are soon home. I earnestly hope that consolidation of our schools will never come.

MRS. J. G. JACKSON, Wisconsin.

Poison-Ivy Remedy

DEAR EDITOR: While sending in my renewal I wish to thank you for many courtesies received in the past, and also for the clean, readable paper you are giving us.

Here is a remedy for three-leaved ivy poison that you may see fit to publish. Wet the affected parts with lukewarm water, then rub with any good toilet soap until the poisoned surface is well coated. Leave on overnight. I have used this with excellent results the past two seasons, and it is seldom that more than one application is needed. RICHARD GODWARD, Missouri.

Why Middlemen Multiply

DEAR EDITOR: The middleman comes in for a lot of hot criticism these days when living costs mount by bounds overnight. But why should we criticize the middleman and then do nothing to prevent a half-dozen of his kind from making a living at the people's expense where but one or two are needed to do this work of distribution? So long as the buying public does nothing but grumble and continues to pay the unnecessarily high prices, middlemen will multiply and flourish.

The need of to-day is for more producers. The roads from the producer to the consumer should be made as short as possible. Co-operative associations and parcel-post marketing are helping to solve this problem. By these means the unnecessary middlemen will be driven into productive pursuits.

L. K. LONG, Michigan.

Sheep as Brush Cleaners

DEAR EDITOR: Sheep as well as goats are efficient brush destroyers. In New England the worst weed tree is the gray birch. E. F. Wiggin, a Belknap County, New Hampshire, farmer, uses sheep in bringing back into tillage an old field grown up to gray birches. He cuts the birches in winter, and the following spring turns sheep on the cut-over land. They keep the sprouts down and the roots rot out.

This was the way Mr. Wiggins solved a tough problem. Ordinarily when gray birches are cut, the sprouts come up in profusion, and soon the growth is heavier than it was originally.

J. T. RAYMOND, New Hampshire.

EW

The Colt's First Year

By James Smith

THE feed a colt gets the first eighteen months, and especially the first winter, determines to a great extent the size of the colt at maturity. The size of a horse determines its value very largely. Good breeding gives wonderful possibilities, but it takes feeding if these possibilities are to be fully realized. The best-bred colt will be no better than a scrub if it is fed upon a starvation ration.

A draft colt makes one half of its development by the time it is one year old, hence the importance of a good start. The colt should be taught to eat grain before it is weaned, and after being weaned should be allowed a liberal ration of alfalfa or clover hay with other available roughage, such as corn fodder, kafir butts, cane hay, and straw. The colt should be fed sufficient grain to keep it in good growing and thrifty condition.

If the colt is fed properly, one should never be able to see its ribs. A ration of from six to eight pounds a day should be fed for each 1,000 pounds of live weight. Oats is an excellent feed, but at the present price is so high it is not practical. A good substitute is corn 70 per cent, bran 20 per cent, and oil meal 5 per cent by weight. Colts should have access to a pasture or a large lot so as to have plenty of exercise.

Fitting Horse Collars

A COLLAR should be fitted to the horse, and not the horse to the collar. The collar that is too large should not be used on a horse in the hope that he will grow large enough so it will eventually fit. A collar that fits well in the spring may not fit at all in the fall.

When one is fitting a horse with a collar, the animal should be standing in a natural position on level ground, with his head held at the height maintained while at work. The collar, when buckled, should fit snugly to the side of the neck, and its face should follow closely and be in even contact with the surface of the shoulders from the top of the withers to the region of his throat. At the throat there should be enough room for a man's hand to be inserted inside the collar.

The style of horse collars are created mostly by the use of different kinds of materials in their construction. Such materials as heavy duck, ticking, and leather are used either alone or in various combinations. All-metal collars may also be bought, but are not so much used.

The stuffing used in horse collars is coarse material, such as rye straw, curled hair, and cotton fiber.

To Prevent Shoulder Galls

The all-leather collar, stuffed with seasoned rye straw with a layer of curled hair in the facing, is a satisfactory kind. The cost is somewhat greater than on the collar made wholly of duck or ticking with cheaper stuffing, but the service given by this collar is usually so far ahead of the latter that the all-leather style proves to be the cheapest in the end.

The collar selected should be examined carefully every time it is going to be used. All dirt and sweat found on the face of the collar should be cleaned off and the surface which comes into actual contact with the neck and shoulder of the horse should always be smooth and hard.

In order to prevent galls and more serious conditions it is not enough to give close attention to the selection of the collar. The shoulder of the horse should always be washed and given special care when the animal is at steady work. If the selection of the collar has been properly made and all other things in regard to this piece of harness looked after, the care of the animal's shoulder is a simple process. Under these conditions washing the shoulder with soap and pure water, after the harness has been removed at the end of a day's work, and thoroughly drying the parts by rubbing it with clean cloths, is all that is necessary.

The colt that is being broken to work in the spring should be started in on light draft while the weather is still cool, so that his shoulders, as well as the rest of his body, may be toughened and put into good working condition before the hot summer weather.

Other common causes for diseased neck and shoulders on a horse where preventive measures should also be applied are implements with excessive tough weights or excessive movements in the tongue when the implement is being drawn, side draft, a free-going animal hitched to a slow or lazy one, walking on a ridge or furrow that is too narrow, which may cause the animal to slip constantly or side step and in this way injure his shoulder. Besides, the neck and shoulder are exposed to the usual number of mechanical or accidental injuries.

To Cure the Kicking Cow

CARE and patience will cure the kicking cow if the proper methods are employed. One method is to pass a rope or strap with a loop in one end of it around the body of the cow and draw it tight. The cow will usually jump at first, but when she finds she cannot get out of the rope she will stand still. If this method causes the cow to give bloody milk, place the rope or strap behind the udder, and draw it tight as before.

Another method is to hobble the cow by passing the rope around each leg behind the udder, and tying just above the hocks. This method is a dangerous one, however, for the person tying the rope. After these methods have been repeated a few times the cow will stand quietly to be milked.

Raising the Calf

By M. N. Harrison

IF CALVES are weaned they should be fed whole milk until they are one month old, when they should be changed to skim milk. They should be fed skim milk until they are six months old. While they are on milk they should be given some grain and alfalfa hay.

A good mixture for grain feed is four parts of corn or corn chop, one part of oil meal, and two parts of wheat bran. After taking the calf off the milk, increase the grain gradually to two pounds a day in addition to silage and alfalfa hay.

The heifers should be bred so as to calve when from twenty-four to thirty months of age, depending upon the breed and growth of the animal. If bred so as to calve earlier than this, their growth is apt to be injured.

Planning War Food Supply

By E. L. Vincent

FAIRLY prophetic of the action taken by the President in his message to the American people on the subject of increasing the food product of the world was the conference held in the city of Syracuse, New York. This was a representative gathering of Patrons of Husbandry, practical farmers, agricultural college professors, bankers, and men prominent in all industrial lines. Before the convention closed, steps were taken looking to the increase of all farm products in the State and improvement in distribution and selling of farm products.

The importance of the food-canning business was brought out by a statement made by Mr. J. P. Olney. Last year, 3,000,000 cases of canned goods were packed, and still there was a marked shortage. Now plans are in the making for an increase of output amounting to 50 per cent. It was the opinion of Mr. Olney that every scrap of pertinent knowledge gained by the agricultural colleges and experiment stations should at once be published in the farm papers and farm bureau bulletins for the aid and encouragement of those who are lacking in farming experience.

The use of grain for the making of malt and spiritous liquors is one of the things which is at the present time vexing Great Britain. That it may become a troublesome subject for the people of this country was the declaration of Mr. G. F. Warren of the State College of Agriculture. So forcibly did he present the matter that upon his recommendation the following resolution was adopted:

"Large quantities of grain are now used in the manufacture of malt and spiritous liquors. If the food situation becomes serious, the Government should take steps to restrict the amount consumed in this way."

Somewhat in line with this was the thought of Mr. Frank W. Howe of the Syracuse College of Agriculture, that the amount of land devoted to the growing of tobacco should be restricted.

Labor Shortage Serious

No speaker who appeared before the conference was listened to with greater interest than was Miss Flora Rose of the Cornell State College of Agriculture, to whom had been assigned the theme, "Household Economics." Miss Rose opened with the striking statement that "if we could obviate and eliminate all household wastes, we would not need to consider the problem of increased acreage for agriculture." Then she gave a number of important suggestions as to the conservation of foods. She believes that the women of the entire country need to study food values more, so that they can best prepare meals that will satisfy the appetites of hungry men and women, boys and girls, and at the same time be most economical.

Soon after the Syracuse conference it was announced that the bankers of New York were ready to loan the farmers of the State almost any amount of money at 4½ per cent, to be used in increasing the production of foodstuffs. Had the New York bankers who made this proposition been present at the conference and heard the unanimous demand for more farm help, they would understand that something besides money must be secured. The discussion of the vexing labor question by many of the most practical thinking men of the State resulted in a quite general agreement that unless there shall be brought about a greater willingness among all industries and professions to assist in providing more farm laborers, the harvest in New York State will be disappointing. The farmers have been fairly staggering under the burdens that have been imposed upon them by the dearth of farm labor.

After a long discussion this resolution was adopted:

"In view of the necessity of maintaining an adequate supply of farm products, and the fact that farm labor is already inadequate for the normal needs of production in preparing this nation for the present crisis, due consideration should be given to the necessity of maintaining an adequate supply of skilled labor on the farm, and that, in case conditions warrant it, labor on the farm should be considered as of equal import with military service, and enlistment for agricultural service should be recognized as service for the Government."

Still another important resolution adopted at the conference was that of appealing to the executive heads of the railroads to do all in their power to carry and promptly deliver farm supplies, farm machinery, and everything else that is needed in the conduct of farming operations.

A draft colt makes one half of its development by the time it is one year old, hence the importance of a good start

The Danger Zone for Many Is Coffee Drinking

Some people find it wise to quit coffee when their nerves begin to "act up."

The easy way nowadays is to switch to

Instant Postum

Nothing in pleasure is missed by the change, and greater comfort follows as the nerves rebuild.

Postum is economical to both health and purse.

"There's a Reason"

YOU CAN'T CUT OUT A BOG SPAVIN, PUFF OR THOROUGH-PIN, BUT

ABSORBINE TRADE MARK REG. U.S. PAT. OFF.

will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. $2.00 per bottle, delivered. Will tell you more if you write. Book 4 M free.

W. F. YOUNG, P. D. F., 23 Temple St., SPRINGFIELD, MASS.

Don't Get Caught Like This!

You'll need horse badly from now on. Why take risk or lay up because of lameness? Send for

SAVE-THE-HORSE

THE humane remedy for lame and blemished horses. It's sold with signed Contract-Bond to refund money if it fails to cure SPAVIN, Ringbone, Thoropin and ALL Shoulder, Knee, Ankle, Hoof and Tendon Diseases, and while horse works.

Our 96-page FREE BOOK is the last word in the treatment of 58 kinds of lameness. It's our 21 years' experience. Expert veterinary advice, Sample Contract and BOOK—ALL FREE.

TROY CHEMICAL CO., 59 Commerce Ave., Binghamton, N. Y.

Druggists everywhere sell Save-The-Horse with CONTRACT, or we send by Parcel Post or Express Paid.

REDUCE THE COST OF GASOLINE ONE THIRD TO ONE HALF

FORDS AND ALL OTHER CARS

One-third to one-half MORE MILEAGE and POWER can be secured from cheapest grade of gasoline or even half gasoline and half kerosene by using the

Newly Perfected 1917 Model

AIR-FRICTION CARBURETORS

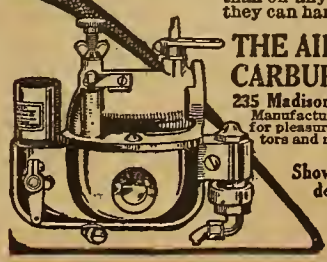
Start your motor instantly and move off at once, even in zero weather, with no "popping", "spitting", or "missing". END your carburetor troubles.

We fit any car without changing present manifold or throttle connections.

ASK your dealer. If he can't supply you, write us direct, sending his name and the name and model of your car.

30% off list price where no representative is already appointed. Ask us about our 30 day trial offer.

Dealers, garages and repair shops make greater profits and give more satisfaction supplying AIR FRICTION CARBURETORS, and spark plugs, than on any other accessories they can handle.



THE AIR FRICTION CARBURETOR CO.

235 Madison St., Dayton, Ohio

Manufacturers of carburetors for pleasure cars, trucks, tractors and motor boats.

Show this adv. to your dealer or repair shop

Crops and Soils

Do Not Burn Stubble

By M. N. Harrison

DON'T burn your wheat stubble, warns L. E. Call of the Kansas Experiment Station. From a few articles advocating the destruction of stubble and straw stacks to eliminate the Hessian fly, some persons have gained the impression that burning wheat stubble is recommended by the Kansas Station. This is not a fact.

"The burning of wheat stubble or wheat straw in the stack," said Mr. Call, "not only would fail as a means of controlling the fly, but, if generally followed, would lead to a destruction of organic matter and plant food worth millions of dollars. When straw is burned, not only is the organic matter destroyed, but most of the plant food is lost."

The burning of the stubble, Mr. Call shows, would not eradicate the Hessian fly, it passing its resting stage in the summer, not only in the straw and stubble above the ground, but in the crown of the plant so low that it would not be destroyed by burning. Moreover, the parasite which preys upon the Hessian fly usually passes the summer in the fly which is in the straw and stubble above ground. Consequently, burning would not only fail to destroy all the flies, but would destroy many of the parasites.

If it were possible to destroy the fly by burning, and if the stubble were worthless for fertilizing purposes, the safety of the plan would still be questionable because of the difficulty of controlling fires started in a wheat stubble.

"There is no danger," continues Mr. Call, "of increasing the injury from Hessian fly by spreading straw. Straw spread lightly as a top-dressing upon the field does not furnish winter protection to the flies. The only possible objection to spreading straw upon wheat would come from scattering in this way the joint worm and the greater wheat-straw worm. There is no danger from these insects unless they were present in comparatively large numbers the season before. Injury from these insects can be easily recognized by the appearance of white heads of wheat in the field.

"If these white heads were numerous, indicating the work of the joint worm and the straw worm, the straw should not be spread on wheat fields, but should be used as a top-dressing upon corn ground, where the straw will be worked into the ground early in the spring. A light top-dressing of straw can be spread on the cornfield that is to be listed. The straw can be worked into the ground by the disk before the ground is listed, or, if not scattered too heavily, it will be scattered satisfactorily with the lister itself.

"The best method of preventing the Hessian fly is to prevent the growth of volunteer wheat in summer and fall, and to delay the seeding of wheat until most of the flies have deposited their eggs. The best method of handling wheat ground is to disk the stubble as quickly as possible after harvest, and to plow the ground comparatively deep after volunteer wheat starts."

Killing Potato Beetles

By M. Baird

SPRAYING potato vines for the purpose of killing Colorado beetles should be done as soon as the work of the insect is noticed. This destructive insect is not hard to control. One part of Paris green mixed with 20 to 30 parts of air-slaked lime or flour, and used as a dust spray, affords the best results on young plants. It should be used when the dew is on, by means of powder guns or dust-spray machines.

The Paris green spray, prepared by mixing one pound of Paris green with 75 to 125 gallons of water and adding one pound of quicklime to the mixture, makes an effective spray. This spray will burn vines if the quicklime is omitted.

For the proper mixing and application of this spray a bucket pump or knapsack sprayer of good quality is sufficient for use in small gardens, but on a large scale a potato sprayer drawn by horses through the rows of plants is necessary.

Arsenate of lead serves the same purpose as Paris green, one pound combined with 15 to 20 gallons of water being more adhesive. It sticks more firmly to the leafage, and is much less likely to produce scorching than the Paris green spray.

Cleaning up the vines and plowing potato land in the fall after the crop has been harvested will aid in reducing the number of hibernating beetles.

Pasture the Roadside

THE old custom of using the roadsides for pasture is being revived this year to a considerable extent. Increased amounts of land put under cultivation, the high rentals being asked for pasture, and the general advanced price of live-stock feeds are all contributing causes.

"Watching cows" is one of the ways in which children can do their "bit" toward helping win the war.

Spoiled Hay as Fertilizer

EVEN where the greatest care is used in hay-making, bad weather sometimes spoils a portion of the crop. Leaving the spoiled hay on the ground is likely to result in injury to the second cutting. Burning it is wasteful, as practically all the valuable nitrogen contained goes up in smoke.

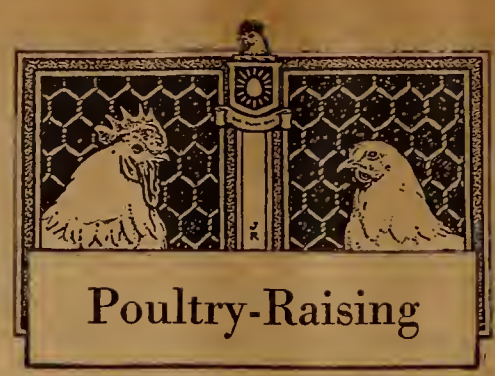
The best use to which spoiled hay can be put is as fertilizer. Haul it to the barnyard and allow it to rot in a compost heap. If it shows signs of "fire-fang," wet it a little. An Oregon crop expert values every ton of spoiled clover hay equal to four tons of fresh manure.

Tiling Land

THROUGH tile drainage, land which on account of its wet condition is unprofitable for cultivation may be made useful and productive. Wet land which is susceptible to underdrainage, always has a soil rich in fertility, and to leave it in such a condition means that the productiveness of the farm is decreased.

Usually the crop returns from land which has been tile-drained will pay for the improvement in from one to three years. The profits from increased production, however, represent but one of the many advantages to be gained by tile drainage. The value of the farm is increased as the number of untillable acres is reduced. Farm values are regulated by the acreage which may be cultivated. Thus, by reducing the number of wasted acres, the entire farm unit is given an increased value. Wasted area is the direct basis for discounting farm value.

Leaving spoiled hay on the ground is likely to injure the second cutting, to say nothing of disturbing the temper of the man running the mower



Poultry-Raising

Back-Yard Chicken Figures

By S. Thorne

THESE days of mounting poultry feed bills are responsible for putting back-yard town flocks on a business basis or else out of business. One such flock that I examined lately, owned and operated by an Ohio woman—Mrs. David Cooper,—is in no danger of being put out of the running even though her poultry-feed mixtures at present costs on an average $3.50 a hundred pounds.

For a half dozen years Mrs. Cooper has kept a flock of three to five dozen layers and has raised from 100 to 200 chicks, using a portion of the rear of an ordinary 60x150-foot city lot for her poultry. The remaining space is devoted to an unusually fruitful garden. The young chicks have the run of the garden until old enough to trouble the garden crops. This run of the freshly cultivated soil and the chance to scratch and hunt bugs among the garden truck in the first few weeks of their lives puts lots of vim and vigor into the chicks. Light-weight, portable wire screens are used to protect the young and tender garden stuff from the chicks, and plenty of tasty greens are grown for the youngsters.

An indication of what Mrs. Cooper's experience and painstaking work with her chickens accomplishes can be understood from her chick-rearing record for this year. When her chicks were six weeks old she still had 91 out of 93 chicks hatched, and one was purposely killed because of a deformity. This ideal showing was accomplished in spite of the usual large and hungry collection of cats and rats found in most city neighborhoods.

The eggs and broilers not needed for home consumption go to private customers. The only mistake evident in Mrs. Cooper's operations is the keeping of ordinary hit-and-miss stock. The same effort could increase her poultry income 20 to 30 per cent by keeping nothing but specially bred, high-producing egg stock.

This bunch of cock birds kept over for another year's breeding on a large Missouri poultry farm have the run of this park-like pasture during the summer

A Labor-Saving Fountain

By Mrs. Geo. W. Church

I FIND that a plentiful supply of clean water is very necessary to the welfare of chickens of all ages. As they consume a great deal in warm weather, a small fountain soon becomes empty and the fowls often suffer before it is discovered.

A very successful fountain is one made with a barrel, keg, or can, according to size of flock. For my own use I have one of these containers attached by a connecting pipe or tube to a metal fountain 6x7 inches, having a trough 3x6 inches. It is equipped with a float and valve which fills the trough automatically as fast as the water is consumed.

This type of fountain is a real labor saver, as a large container need be filled only two or three times a week if kept in the shade. The small metal fountains can be bought for about 60 cents apiece.

Anoint for Lice

DON'T forget to dose the hens and chicks, after feathering, with an ointment made of equal parts of blue ointment and vaseline or lard carefully mixed together. Rub this ointment thoroughly onto the skin under each wing and also a little below the vent of each bird, using a portion of the ointment the size of a small grain of wheat for each of the three places, and half as much for a half-grown chick. Repeat once in two or three months. This is a sure remedy for all kinds of external poultry parasites except mites.

For mites keep the roosts and nests painted once a month with coal oil or, better yet, crude petroleum. Also paint with the same preparation the coops where the young chicks sleep.

Stop the Wastage

EVERY mouthful of chicken feed now costs a penny or thereabouts, therefore stop the leaks. It is easy to allow dollars' worth of dry mash to be hooked out of feeding troughs and containers every week by the birds while eating, and thus be wasted in the litter and dirt. Poultry-feeding hoppers can be so made as to prevent practically all waste. But it requires experience, careful attention, and some knack in constructing and remodeling the hoppers or other feeding containers used to prevent entirely all wastage of this kind.

There are several essentials required for the ideal dry-mash hopper. The hoppers must be easy of access, sufficiently large and numerous enough to accommodate all the flock, and so constructed and placed that the birds cannot get into the hoppers or foul them with litter and filth. There is one more important need to fill not yet fully and practically met in feeding appliances, in so far as I can learn. This is an automatic shut-out against rats and English sparrows which will allow the birds to open the feed hoppers, troughs, and containers at will, and after the birds are through eating the hoppers will automatically close to exclude the rats. Here is a matter of enough importance to draw the inventive thought of the best practical inventors.

Have any FARM AND FIRESIDE readers invented or have they knowledge of any rat-excluding automatic self-feeders that will work satisfactorily week in and week out? If so, FARM AND FIRESIDE will be glad to get the particulars and pass the good word along.

Don't Wash Eggs!

EXCEPT for immediate use or for local customers who use fresh eggs soon after delivery, never wash eggs even if soiled. Egg investigations show that over five million dozen eggs spoil unnecessarily because they were washed or in some way became wet before going into cold storage. Washing eggs dissolves and removes the natural gelatinous covering which prevents germs of decay from getting through the pores of the egg shells.

Neither should eggs to be stored in water glass or other preservative be washed. If shells are badly soiled, better use the eggs for cooking purposes and spend the time needed for washing eggs in keeping the nesting material clean and providing clean dry litter in the laying-rooms.

DARKENING the incubator chamber at hatching time prevents crowding and jostling of the chicks, and thus their strength is conserved to start quick growth as soon as they are removed to the brooder houses. The early maturity of the chick depends upon the start.

E

Dairying

Choice Stock for Calf Club

By W. A. Markland

WITH the bankers back of the plan, farm girls and boys of Macon County, Illinois, have received a shipment of 100 heifers from New York State, and are working to demonstrate the desirability of keeping first-class milch cows on the farm.

The shipment was received the last week in April, and on the night of arrival a calf was born to one of the heifers, to the delight of the new owner. Every one of the cows is a registered Holstein, and has been bred to a registered bull.

They were sold in $80, $75, and $70 lots, the club members drawing numbers for first choice.

To buy one, the boy or girl must borrow the money from the bank, and must give his or her own note with security. This is Macon County's first calf club, but will not be its last, as these clubs have been successful in other parts of the State.

Washed Butter Too Much

By Chas. E. Richardson

A CERTAIN farm woman who has the reputation of being a good butter maker has also to her credit the fact that she does not allow "a speck of dirt" anywhere around her home. Therefore her butter has a quick sale, since her customers are sure that it is clean.

But her butter formerly had a sort of "flat" taste. It seemed to lack that nice buttery flavor that fresh-made butter generally has. She realized it too, by comparing it with other good butter, and asked me if I could tell her what the cause of it was.

Well, I talked with her for over an hour, and asked all sorts of questions about the way she made her butter, but I could not discover anything wrong with her method. I told her that I would have to watch some time when she was churning, if she did not have any objection.

So I called one day when she was churning and saw how she did it. Well, I found out what made her butter come so insipid. In a way, it was because she was too neat.

When she washed the butter in the churn she was so afraid that it would not be washed clean that she washed it seven or eight times in as many different waters, thereby washing it almost tasteless for fresh-made butter. I told her that as a rule two times were enough, and since then her butter has that delicious delicate flavor that can only be found in fresh-made butter, if it is made the way it should be.

Silo Made from Flooring

By C. M. Long

IN THE early fall of 1913, when it was apparent that the demand for silos would greatly exceed the supply in Johnson County, Missouri, the dollar-a-ton silo came into existence. This silo, which is also known as the Missouri silo, is made from a good grade of matched flooring held together with wire cable, iron hoops, or wooden hoops, according to one's preference or convenience.

During that fall, 65 of these silos were built, and not one proved a failure. The time for constructing the silos was so short that they had to be built the quickest way possible. The material chiefly used was yellow pine or fir flooring secured from local lumber yards.

Taken Down When Empty

As a rule, no doors were cut when building the silo, but were made as needed when the silage was fed. Some provide concrete foundations, while others simply cut a narrow trench in the ground to set the staves in.

In nearly every case the silos were taken down when empty, and stored away until needed the following fall. The few warped boards can be used for other purposes and new ones substituted.

For convenience in handling the lumber during the process of construction, seven of the flooring boards may be battened together with salt-barrel staves and small nails, as shown in the picture. When the outside hoops are in place and tightened, the barrel staves are removed.

For this temporary silo, a trench in the ground is the only foundation

More High Cream Checks

By Carlton Fisher

"I HAVE noticed with interest," writes Mr. O. L. Ulery, an Illinois reader, "some items in FARM AND FIRESIDE concerning high prices for cans of cream. Here are some summarized statements of cream that I have marketed between January 18th and May 1st of the present year. Each sale represents a 10-gallon can:

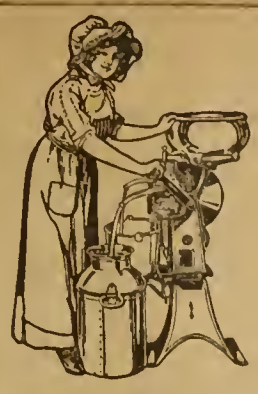
Weight	*Test*	*Price*	*Amount*
80 lb	56½	$0.40	$18.08
77	60	.40	18.48
77	60	.40	18.48
76	57	.42	18.20
80	59	.46	21.71
79	62½	.39	19.25

Total received for six cans.....$114.20

"You will notice that this is an average of slightly over $19 a can. At the same station Mrs. Blenn Bowira marketed a 5-gallon can of cream containing 40 pounds of cream testing 62 per cent, for which she received $11.16."

Wm. H. Patmore, Jr., a South Dakota reader, states that the last can of cream he marketed tested 50½ per cent and, with butterfat at 44 cents a pound, brought him $17.91. With transportation cost deducted, his net return was $17.48, which he considers "pretty good" for one 10-gallon can of cream.

Portion of the shipment of 100 heifers owned by boys and girls of Macon County, Illinois. All of the animals are registered pure-breds



You need a new DE LAVAL SEPARATOR NOW

1st If you are still using some gravity or setting process of creaming—

BECAUSE YOUR WASTE IS greatest and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE TIME IS OF GREATest value on the farm at this season and the time and labor saving of the good separator counts for most.

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves.

BECAUSE THE WORK OF A New De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF THE poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are the greatest at this season.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE THE NEW DE LAVAL is so much simpler and more easily handled and cared for than any other, and you can not afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE THE DE LAVAL SEParator of to-day is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

THE FRONT THAT GAVE THE GRIFFIN SILO FAME

Continuous Open Door Front. Permanent steel ladder attached.

Size 8 x 20	- -	$84.10
" 10 x 24	- -	121.05
" 12 x 26	- -	156.00

Other sizes in proportion.

GRIFFIN LUMBER CO.

Box 17, HUDSON FALLS, N.Y.

GET OUR LARGE FREE CATALOG

MINERAL HEAVE COMPOUND In use over 50 years

Booklet Free

$3 Package guaranteed to give satisfaction or money back. $1 Package sufficient for ordinary cases.

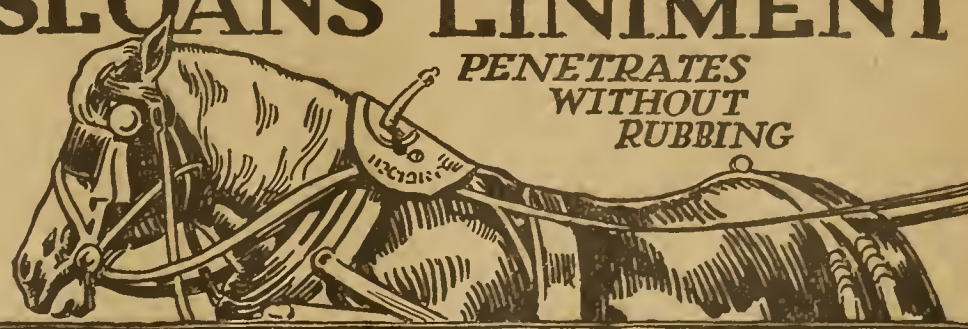
MINERAL HEAVE REMEDY CO., 425 Fourth Ave., Pittsburgh, Pa.

APOLLO Galvanized Roofing

Best protection obtainable from fire, lightning, and storms. Made from the well known APOLLO-KEYSTONE Copper Steel Galvanized Sheets. These sheets are the highest quality and most durable Galvanized Sheets manufactured, and are unexcelled for Culverts, Silos, Tanks, Roofing, Etc. Sold by weight by leading dealers. Look for the Keystone added below regular trade mark. Owners of farm buildings should have our "Better Buildings" booklet. Sent upon request.

AMERICAN SHEET AND TIN PLATE COMPANY, Frick Bldg., Pittsburgh, Pa.

SLOAN'S LINIMENT



A lame horse can't give full service. Relieve the bruised muscle, strained tendon or stiff joint with Sloan's Liniment, quickly penetrates. You will find many other farm uses for it. Thousands of farmers indorse this universal relief for pains and aches. At all dealers, 25c. 50c. $1.00 a bottle. The $1.00 bottle contains six times the 25c. size.

Canadian Farmers Profit From Wheat

The war's devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and wheat at over $2 per bu. offers great profits to the farmer. Canada's invitation is therefore especially attractive. She wants settlers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops.

You Can get a Homestead of 160 acres FREE

and other lands at remarkably low prices. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to acre. Wonderful crops also of Oats, Barley and Flax.

Mixed Farming as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

There is now an extra demand for farm laborers to replace the many young men who have volunteered for service in war. The government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

M. V. McINNES, 178 Jefferson Avenue, Detroit, Michigan
W. S. NETHERY, Interurban Building, Columbus, Ohio
Canadian Government Agents

Both boys and bears love sweets; otherwise, as you shall soon see, this story would never have been written

The Baiting of Bruin

Petey and Normie Go Hunting and Bring Down Big Game

By WILLIAM GERARD CHAPMAN

DRAWING BY DeALTON VALENTINE

ON THE Schoonmaker farm all interests were centered upon the making of maple sugar. The first warm rays of the early spring sun were now causing the last snow of the season to melt and soak into the earth by day, and the last of winter's frosts were hardening up things again by night; so that with these alternations of frost and thaw it was ideal sap weather. Up in the maple grove on the hard-wood ridge Petey and Normie Schoonmaker were helping their father in the pleasant task of sugar-making, gathering the sap from the tapped trees, carrying it down to the big caldron suspended over the stone "arch," and feeding the fire beneath with great armfuls of wood from the windfalls.

"Sugaring off" was the most fun, however. Then one could pour hot, thick syrup on the snow and feast on maple "wax," a deliciously sweet and gummy substance that almost defied the working power of one's jaws.

"Let's give Dasher a taste," proposed Normie as the third of the trio of inseparables approached his two masters with an inquiring nose. Petey seized a large lump of soft warm wax, called the dog close, and, bidding him "speak for it," popped it in the opened mouth and clamped the jaws together upon it.

Dasher's expression was ludicrous enough to bring a burst of laughter from his youthful tormentors. Vainly he tried to move his jaws, then madly careening round about, pushed his muzzle into the snow and pawed at his tightly closed mouth; but to no avail. Neither did a wild dash among the trees help matters, and the impossibility of voicing his good-natured objections in his customary language was probably the greatest hardship of all.

In a few moments the wax began to soften. Delicious tricklings of sweetness ran down his throat, and then with a final and successful effort he gulped down the cloying mass—and came up to the boys with unmistakable demands that the same joke be played upon him again.

Petey's laughter rang as loud as his brother's at Dasher's antics; then he subsided into thought, and quietly began to make a fresh batch of wax. "What's that for, Petey?" asked Normie. "Haven't you had enough? I'd like to bust with all I've eaten; feel like I never want any more maple wax as long as I live."

"Never you mind, Normie. You just wait and see," answered Petey. "I'm going to leave it here for later on; we may want it," he added mysteriously. And Normie had to be content with that.

"That's about all for to-day, boys," said their father, who had been an amused spectator of the joke played on Dasher. "We'll pour off the syrup, put out the fire, and get back to the house. It's going to harden up again to-night; sap's stopped running. We'll have to hurry to the house to get the chores done."

As they walked home in the early twilight, Petey voiced a request on which he had been pondering during the clearing-up activities.

"Let Normie and me come back to the ridge after supper and see if that bear doesn't come, Pa, won't you? We can throw a haystack cover over the arch and dress heavy, and wait there without getting a cold. It'll keep warm a long time from the fire. And maybe the bear will come nosing around, and if he does I'll get him with my rifle. We won't be in any danger, Pa; he couldn't get at us if we put the hog-lot gate across the front of the arch. Can we, Pa?"

"Well, what on earth!" exclaimed their father as he stopped in his tracks and surveyed his elder son with startled amusement. "That old bear'll never come back again to-night. He's eat his fill of that shote and likely'll go back to his winter hole and stay till he's hungry again."

"Ah, please, Pa," begged Petey, sensing the encouraging note of tolerance in his father's voice. And Normie, wildly eager to share such a thrilling vigil with his brother, chimed in with his pleading. "We won't stay up there long, Pa. We'll come back by ten—you can blow the dinner horn for us when it's time."

Half reluctantly Pa Schoonmaker finally granted the request of his two eager boys. Surely no harm could come to them, for even if the first bear awakened out of its winter hibernation had come to the home place the night before, made bold by its long fast, and carried away a fat pig, it probably wouldn't have any reason to invade the sugar-bush the following night. And an evening spent in the dark precincts of the hard-wood ridge would probably cure the boys of their craze for nocturnal adventure.

"All right, then. But you'll be sick of your bargain," he assented, and Petey and Normie voiced their satisfaction in whoops of glee, and then became serious with thoughts of the possibilities of their approaching adventure.

After chores and supper were disposed of, the two boys started on their return to the scene of the day's activities. Up the wood road they pulled their sled laden with blankets, the hog-lot gate, an old tarpaulin, and Petey's trusty .22-caliber rifle. Sam Schoonmaker smiled at the idea of potting a black bear with a .22 as he watched the boys trudge off. No fear, though, that the bear would disturb their vigil on the ridge, the now slightly apprehensive father decided.

But Petey had a well-defined idea, and he proceeded to put it to the test upon their arrival at the arch. They disposed of their load in such manner as to insure comparative comfort during their evening's occupancy of what was in effect only a roomy, stone-built fireplace among the trees; and when Petey had attended to certain matters outside they ensconced themselves in the still warm interior. Overhead the tarpaulin provided an excellent roof, and the hog-lot gate at the opening gave them a satisfying sense of security. The blankets, aided by the comforting warmth still radiating from the floor of the arch, kept them warm and snug; and but for the somewhat oppressive stillness that immediately ensued when their preparations were ended they would have felt very much at home.

"Let's give Dasher a taste," proposed Normie as the dog approached his two masters with an inquiring nose

They snuggled close to each other and conversed in whispers, dwelling with painstaking attempts at a casual tone upon each woodland sound that broke the silence. The minutes passed very slowly. An hour. A twig in a tree above them snapped in the frosty air and brought them to startled attention. "Pshaw, that's nothing," guardedly breathed Petey; "only a branch breaking. Anyway, I've got old Brown Bess here on my knees, and—"

Crash! Normie clutched at his brother as an appalling commotion suddenly broke upon their ears. And almost before Petey could bring his rifle to full cock a snorting, thrashing, heavy body fell against the door of their haven and was in upon them. A yell broke from their lips as they cowered into the furthermost recesses of their all too cramped quarters. A terrifying bulk of hairy, snarling fury crushed them against the walls. Normie suddenly yelled, whether with pain or fright Petey couldn't tell, as the furious animal, dimly seen in the darkness, whirled toward the side of the arch where Normie crouched and left the entrance unblocked.

With the primitive instinct of self-preservation Petey crawled through the opening, still clutching his rifle. But no sooner was he outside than he turned to re-enter. Fright gripped him, but Normie was still inside, at the mercy of a savage beast, and his cries suddenly had a stifled sound that sent a chill of terror up and down Petey's spine. "I'm here, Normie!" he cried with reassuring heartiness, valiantly forcing down the terror that prompted him to retreat; and, advancing into the black hole where his brother was meeting—death, perhaps!—he thrust his rifle forward, and as the barrel touched a yielding mass, pulled the trigger.

With the report the commotion was redoubled, but only for a moment. Then came a long bubbling sigh, and a dimly seen, swaying object of huge size seemed to settle and spread over the floor of the fireplace.

Now Petey could hear Normie's whimpering.

"Where are you, Normie? Are you hurt?" he cried. But Normie was too deep in the throes of terror for immediate answer.

Petey felt certain that the bear—for such he now knew it to be—was dead. His bullet must have struck a vital spot, for the great black-furred creature stretched out beneath his investigating hands was still. Petey remembered his matches, and finding one he struck it and as the glare lighted up the gloom he could hardly repress the sudden trepidation that prompted him to turn and run once more. For there at his feet sprawled a big bear, black as night and lean with the winter's long abstinence from food, and, as Petey knew, a dangerous enemy at close quarters at such a time. Against the back wall, flattened down into its angle with the floor, lay Normie, wild fright in his eyes, but seemingly unhurt.

"Answer me, Normie. Are you all right?" quavered Petey.

Then as Normie replied with a slightly questioning "Yes, I reckon so," and rose painfully from his cramped position, carefully feeling himself over as the match light faded, Petey's full courage returned, and he whooped with joy.

"You needn't be afraid; he can't hurt you now, Normie. He's dead. Just think I killed the bear! What d'you s'pose Pa'll say when—"

A long-drawn shout from the pasture that skirted the base of the ridge broke in upon his words. Both boys recognized it instantly and answered with a reassuring shout, and then Normie crawled over the carcass of the bear and they waited for their father to arrive.

Breathless with haste, Pa Schoonmaker strode through the trees to the sugaring-off arch, his path lighted by the lantern he carried. His peering eyes beheld his sons standing before the opposite side of the arch, and a glance satisfied him that they were safe. "Heard your rifle go off—what was it? Are you all right?" he puffed.

Calmly and importantly Petey waved a hand toward the interior of the arch. "We shot the bear, Pa. Just like we said we would. There he is, inside."

Wonderingly, Pa Schoonmaker poked his lantern into the black cavern of the fireplace. What he saw struck him speechless for a moment.

"You got him right in the ear; it was a mighty lucky shot," he said finally as he examined the carcass. Then he backed out and suddenly gathered his two sons in his arms. "'Thank Heaven he didn't hurt you!' he cried with a break in his voice. "Gosh, I'm proud of you, boys! I'll go get Wes Hooper and we'll skin the carcass to-night, and you two'll have a fine bearskin rug to hop out on winter mornings. Now tell me how it all come about."

Petey, helped out by Normie, described the affair graphically as they strode through the lower pasture toward the house. But Sam Schoonmaker remained puzzled after the recital.

"What I can't understand is," he remarked, "how that critter came to bust into the arch, and why Normie wasn't chawed up when the bear got at him."

"Oh, I forgot, Pa," said Petey. "I set a bait for that bear. I laid a big hunk of maple wax a ways in front of the opening. Bears like honey, you know, and why wouldn't they like maple sugar? I reckoned a bear could smell it a good distance; and I guess our bear did. He must have got his jaws set on it and it scared him and he jumped around—"

"Like Dasher did this afternoon," supplemented Normie gleefully.

"—and plumped right into where we were!" Petey concluded.

Pa Schoonmaker drew a long breath.

"Yes," he agreed, "that was the way of it. And that's the reason Normie didn't get all chawed up, I reckon," he added with a thankful heart.

E

Basket Ball on the Farm

By Edna Parry

THERE was only one thing missing in my new home, and that was meeting other girls. Even when my husband took me to the post-office, eight miles away, on Saturday afternoons, the few women I met seemed too tired to talk.

I concluded that they were rusted out, rusted out from staying at home so closely—not from overwork. No place to go; no common interest, no diversion—and endless routine of dish-washing, sweeping, and mending.

Before I was married I had been a gymnasium teacher. There I had seen basket ball make pale and listless girls lively, animated, and enthusiastic.

I telephoned to the several neighbors I had met, and asked them to take tea with me Wednesday afternoon. While they were enjoying the refreshments I revealed my plan. The response was discouraging: harvest time coming with extra men to cook for; the men worked so late the women did their extra chores; anyway, it had never been tried before and they felt sure it would not be a success.

"Then suppose we play this afternoon," I said, taking the ball from my trunk. Outside we began a game founded on basket-ball rules. They played with vim when they understood the game, and we played fast and furious. These were no anemic college girls, but women used to hard work. In the excitement small cares dropped away, and at the end of the game no one spoke of being too busy to come the next week to clear a plot for the real game.

Such implements as spades and shovels, fire shovels, pickaxes, hatchets, hoes, and even a pitchfork, were wielded by enthusiastic hands. We knocked the hoops from an empty sorghum barrel, nailed the hoops to the poles—a little more digging and our baskets stood at each end of the field. We found that whitewash would last about two months for our lines, and occasionally we pulled a few weeds. Otherwise our ground needs few repairs.

OUR first practice was short, for we were tired; but when they left late in the afternoon no hungry harvesters would keep them from practice the next Wednesday.

Between halves of our first real practice someone suggested that the first game should be at the Fourth of July picnic and played before the boys' baseball game. Suits, someone said, were necessary for a real game, and all felt that it was a poor time to ask for money for play dresses. Instead of giving up the idea, we decided each to earn our suits and tell at the practices how we were getting the money. These dresses were calico—dark blue for one side, and for the other, red.

Our experiences were unique. One watered calves at noon, at the rate of a cent a calf, while her husband was cultivating corn two miles east of the house. The twelve calves soon brought her a suit.

Another inserted an advertisement in the local paper, saying that she would darn socks and stockings left at the store, for one cent apiece. These were returned to the store a week later. After three trips she brought home the calico for her suit.

One pale worn-out girl carried an eight-months-old baby to the field every day for two weeks to save hiring a neighbor's boy to take a hot lunch to her employer. Her ambition, thus aroused, has since carried her through high school.

From early spring until late fall, for five years, our teams have been meeting weekly. Our neighborhood is wide awake at last, and last winter a flourishing debating society grew out of it. This meets on basket-ball day, and everyone is invited to attend and take part.

FARM IMPLEMENTS GAME WORKERS

IN THIS issue of FARM AND FIRESIDE we expected to announce the awards in our Farm Implements Game, but find that we badly underestimated the time it would take to go over the thousands of answer sets submitted. We are working hard, however, and hope to make the announcement in the next issue, July 21st, or at the latest in the August 4th issue.

Please curb your impatience as much as possible, and remember that we are using every care to assure that each answer set submitted receives its just reward.

Editor The Farm Implements Game.

Looking Your Best

How to Have Comfortable Feet in Hot Weather

By MARGARET DRUMMOND

THE feet play no small part in our personal appearance and everyone who leads an active life knows how very important complete comfort in this respect is. Pain in the feet, whatever the cause of the suffering may be,—corns, chilblains, bunions, tight shoes, or ill-fitting stockings,—is instantly expressed in the face, and the most beautiful face in the world loses its charm when dark circles appear around the eyes or droopy lines appear around the mouth.

In the armies of the world just as much attention is given to the care of the feet as to the food supplies, and it is impossible to overemphasize the importance of constant care. Especially when the first warm days come should the feet be given attention. If possible, change to light-weight shoes in the hot weather and change the stockings daily.

There are two things which make for foot comfort—cleanliness and perfectly fitting footgear. Give your feet a hot bath at night, using a stiff brush and good strong soap—the yellow kitchen soap is excellent. This will remove the scarfskin, and the alkali in the soap will cleanse the pores. If there are any calluses left after scrubbing, remove them with the blunt side of a pair of scissors or a piece of pumice stone. Pare very carefully any corns—that is, if the roots are too far under to be worked out with the fingers—and massage out the little kernels from which the corns grow. Rinse the feet well, and then apply olive oil and alcohol (equal parts), finishing up with a little antiseptic powder. Cocoa butter is also very soothing when rubbed into the feet and ankles. It should be carefully wiped off and a little toilet powder applied before putting on the stockings and shoes.

Clean the nails with as much care as you give those of your hands. Keep them cut squarely across in a line with the ends of the toes, and where there is a tendency to in-growing, cut a V-shaped notch in the center of the top of the nail, and after removing all the scarfskin pack a little absorbent cotton under each corner. Change this each day and the nail will very soon grow straight.

Several correspondents have written to ask how they can prevent their feet from swelling and burning. My suggestion is that they wear shoes large enough to allow the foot free play and thin enough to allow the air to get to them. Much bathing of the feet with tepid salt water and vigorous rubbing with a coarse towel will not only reduce the swelling, but will also strengthen the muscles. Where there is constant swelling with bloated veins it is a matter to tell your physician about, as your diet is probably at fault.

MANY women dread ironing day, as it almost always means foot discomfort, but if the woman who suffers from burning feet because of having to stand so much will only stop long enough, once or twice a day, to bathe them and change into fresh stockings, the comfort and renewed vigor will more than make up for the time spent.

Learn to use a footstool—it will rest the feet wonderfully. The greatest evil of tired feet is that the owner very soon develops a disinclination for exercise, which invites stoutness and ill health. When your ankles feel full of aches and pains listen to the call of nature and start to exercise vigorously, for that is what is needed. It may not be very easy if you have let yourself fall into the habit of not exercising, but persistence will win out for you.

Many people make the mistake of wearing stockings that do not fit and, whether they are too short or too long, they are bound to make for discomfort. If too short, they cramp the toes by pulling them into an unnatural position; and if too long, they gather in wrinkles, which invariably mean blisters or corns. Shoes, also, should be very carefully fitted, and in this respect it is good to know that women are much more sensible than in former years when one blushed to ask for anything over a number 5.

A little time and caution given to the freedom of the toes and the height of the heel will insure much comfort and health for your feet, and do not forget that too large shoes are just as injurious as are too small ones, and will be just as productve of corns and bunions. The height of the heel and the shape of the shoe depend on the shape of the foot, and while there has been much written against the high heel, the fact remains that to many people a high heel is more comfortable than a flat one. The Cuban heel—or military heel as it is sometimes called—is the ideal one, combining comfort and smartness for the majority, but it is best to allow your own comfort to determine the height of your heels. Remember, however, that you must be honest with yourself as to what is comfort.

Care of the feet should begin in childhood, and it must be remembered that a little child's foot grows rapidly and the shoes must be changed to keep pace with the growth. The least undue pressure is simply laying the foundation for future troubles. It is not a good plan to have one child wear out another's discarded shoes, as each individual foot has its own peculiarities, which make the economy a doubtful one.

Remember, feet are small for the amount of responsibility they carry.

Treatment of Acne

D. P. K., VERMONT—The little white heads you speak of are acne. Bathe the parts in water, open the white heads with a fine needle which has been sterilized by dropping it in boiling water. Press out the white head and then bathe the spot with peroxide.

Correct Weight

S. O. R., NEVADA—The correct weight for a woman of twenty-eight and 5 feet 6 inches tall is 135 pounds. The best way to reduce is to limit the amount of fats and sweets in your diet very strictly, and also to eat less cereals and bread. You do not give your brother's age and height, so that I cannot tell you his correct weight.

To Bleach the Skin

L. E., OKLAHOMA—Lemon juice will remove light freckles, and is a good and harmless remedy for bleaching the skin. Washing the face with buttermilk is an old-fashioned but a helpful method of whitening the skin.

To Develop the Arms

W. L., PENNSYLVANIA—You are a little under weight for your size, but you are still growing. Eat plenty of simple food of all kinds, and stay out in the open air as much as possible. A very good exercise for the arms is to stretch them straight above your head and then describe a circle with them in front of your body. Do the exercise slowly and for at least twenty times each morning before dressing.

Dark Rims Under Eyes

M. M. D., MINNESOTA—The reason that your skin is not clear and your eyes have dark rims is that you are probably not following the right diet. Eat plenty of fruit and vegetables to keep your blood in good condition, take more exercise out of doors, and stop drinking coffee.

Reducing Exercises

G. C. M., CALIFORNIA—A good reducing exercise for you is to lie flat on the floor and, without raising your shoulders, raise the legs until they are at right angles with the rest of the body. Do this for five or ten times to start with, then raise the body, keeping the legs flat for five or ten times. Start gradually with these exercises, and increase as you get used to them. Running up and down stairs and the bending exercise (without bending the knees try to touch the floor) are also good and simple exercises.

You must give up excess fats and sweets if you wish to be thin.

Grape-Nuts

Made from choice whole wheat and malted barley, this famous food retains the vital mineral elements of the grain, so essential for balanced nourishment, but lacking in many cereal foods.

From every standpoint—good flavor, rich nourishment, easy digestion, convenience, economy, health from childhood to old age—Grape-Nuts food.

"There's a Reason"

OLD BAGS Cash paid for all kinds of bags or burlap, any quantity. Send for price list. *Hudson Bag Mfg. Co., Bayonne, N. J.*

CASH FOR YOUR OLD RUBBER, METALS AND RAGS. SEND FOR PRICES. *Hudson Supply & Mfg. Co. Bayonne, N. J.*

FOR SCOURS Sure cure for calves with scours. Manufactured by the Connecticut Disinfectant and Exterminating Co., Stamford, Connecticut. Price 50c per bottle, postpaid.

RAT CORN
Kills Rats and Mice Harmless to Humans
No Odors SEED, HARDWARE, DRUG, GENERAL STORES

CARDED WOOL BATTS

Send us your wool and we will card it into batts for you. Any quantity. Send for circular. Haynes Supply Company, Lockport, N. Y.

LE PAGE'S CHINA CEMENT
STANDS HOT AND COLD WATER 10¢

Only $2 Down
One Year to Pay!
$29 Buys the New Butterfly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.
30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.
ALBAUGH-DOVER CO. (12) 2139 Marshall Blvd. CHICAGO
100,000 now in use

AGENTS: $40 A WEEK
Wonderful New Hosiery Proposition
Guaranteed ONE YEAR Must wear 12 months or replaced free. Agents having wonderful success. Mrs. McClure made over $200 first month. Mrs. Perry made $27 a week in afternoons. H. W. Price sold 60 boxes in 12 hours. G. W. Noble made $35 in one day. Sworn proof. Repeat orders make you a steady income.
SILK HOSE FREE
Try our hosiery before selling it. We want you to become familiar with our hosiery line. Write quick for particulars if you mean business and state size of hose worn.
Thomas Mfg. Co. 6346 Elk St. Dayton, O.

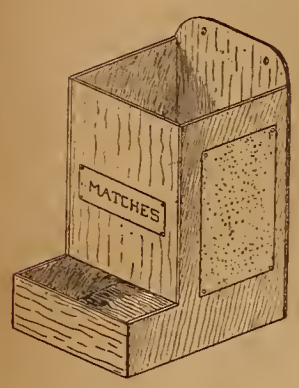
When Does Your Subscription Expire ?

Look at the letters and figures in the upper right-hand corner of the address label on this copy of FARM AND FIRESIDE. The last figure indicates the year and the letter the month in which your subscription expires, for instance "JY7" means that your subscription expires in July, 1917. If your subscription expires soon, send in your renewal NOW. *We* will appreciate it greatly and *you* can't afford to miss a single issue. 50 cents pays for one year, $1.00 for three years. DO IT NOW.

Circulation Department
Farm and Fireside, Springfield, Ohio

Kitchen Match Box

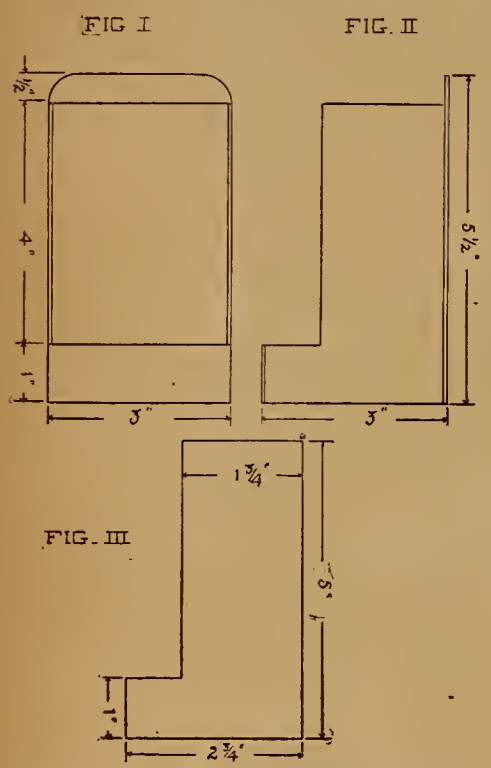
By A. E. Swoyer



THE average match holder is usually possessed of three faults: it is very seldom where you want it, it does not hold enough matches, and it is easy to upset.

The material necessary to make this one may be found in an old cigar box, as the holder is small and need not be excessively strong; all labels should, of course, be scraped away and the wood sandpapered smooth. From this wood, cut two pieces of the shape and dimensions given in Fig. III to form the sides; one piece for the bottom, 2¾x2¾ inches; one piece for the front, 2¾x4 inches; and one for the front of match compartment 1x3 inches. The back is 3x5½ inches, and may be rounded at the top as shown, although the box will hold matches fully as well if the corners are left square.

In order that these dimensions may work out correctly, these pieces must be put together as shown in the drawing of the finished piece; that is, while the front of the box is fixed between the



two sides, both the back and the front of the lower compartment are nailed to the sides, and so on. This is rather important, as the inside of the box must be of the right size to hold a five-cent box of matches quite snugly. The actual joining of the pieces is accomplished by the use of extremely fine wire nails.

After the box is put together it should again be rubbed with fine sandpaper to clean it. It may then be finished either with wood dye and varnish or with a coat of paint, the former finish being the preferable one.

To fill this box, lay it down upon its back and slip the inner compartment of a box of matches into it, face up; then, when the holder is hung in an upright position on the wall, a few matches will drop out into the small compartment, where they may be picked out as desired, and this supply will be kept up until the last match in the box has been used.

Simple Remedies

By Jane Macpherson

I HAVE found several drugs indispensable in the home, which, under trade names, cost several times as much. It is very often possible to buy antiseptics and water softeners at a great saving in this way.

For instance, boric, or boracic, acid as a drug is inexpensive, yet I have had to pay several times as much for it when purchasing under a trade name. This acid is one of the most widely used eye remedies, and is the principal ingredient in most of them. The same is true of most foot powders.

For an eye wash I use a saturated solution. This same solution is also a splendid antiseptic, and I keep a small quantity made up for this purpose. It may be used on open wounds without pain. This is very effective, and is also non-poisonous.

As a foot powder the acid is used in the powdered form. One or two spoonfuls to a shoe relieves tired, aching, and sweaty feet, and also removes all odors.

I keep a bottle containing a saturated solution of borax for use in my sink. A few spoonfuls of this softens the water and brightens aluminum ware. A mixture of half borax and half sugar is an excellent ant poison.

Subject to Moisture

By Lillian Trott

FURNITURE which, like chairs and stands for porches and tents, is subjected to continual dampness, often falls apart without warning. To forestall this disintegration, coat once or twice with transparent shellac before setting the article in an exposed spot. Be doubly thorough at the joinings, and thus add years of wear to its life.

Common Canning Errors

A GREAT deal of the faulty canning which I have seen can be traced to a few simple errors. As a rule, they are due to deviations from instructions which seem slight to the inexperienced canner, but which in reality make a great difference. I shall mention a few of the commonest failures with their causes.

A sour taste in corn, beans, or peas is due to allowing the vegetable to stand unprocessed for too long a time after it has been blanched, or hot water has been added. When brine or water has been added, the can should be sealed immediately.

The darkening of corn is usually due to using corn that is too old, blanching it for too long a period, allowing the corn to stand in cold water too long after hot dip, or allowing the can to stand with hot water in it so that the corn becomes water-soaked.

The cloudiness of peas and other canned food is due to too long cooking either when blanching or processing.

The shrinkage of greens or soft fruits is due to careless packing, not packing the jar sufficiently full, or blanching for too short a time or sterilizing for too long a period. Greens and vegetables that are soft should be blanched sufficiently to shrink them to about the consistency they will be when ready to use. It is well to steam spinach and other greens rather than to blanch them when in hot water, unless the flavor is very strong; then blanching takes away the excessive flavor.

Loss of water in a can is usually due to too rapid boiling. Water is not hotter when it is boiling fast than when it is at the boiling point. It is simply boiling more rapidly. For processing it should be kept at the boiling point. If a greater degree of heat is required, salt can be added to the boiling water.

Corn and sweet potatoes usually swell in processing; therefore jars should not be filled to the top.

To keep apples from discoloring, allow them to stand in cold water with a teaspoonful of lemon juice to each gallon of water.

Beets lose their color because the top and tails are cut off too close to the beets.

Put Coffee in Cream Gravy

By Elizabeth Ayer

IN MAKING milk or cream gravy, where the grease gives little color to it, a few tablespoonfuls of coffee added to it will give the gravy a much better color. The coffee also adds greatly to the flavor. This is especially successful when making ham gravy.

Wartime Recipes

TO THE housewife comes the responsibility of saving and conserving the food resources of the country during the present great crisis. She must eliminate the waste that comes from preparing foods carelessly, preparing too much so that part must be thrown away, or using high-priced foods when cheaper ones would supply just as much food value.

The following recipes are examples of cheaper dishes which have a high nutrient value:

CASSEROLE ROAST—(A casserole may be improvised by using a heavy earthenware dish covered with a plate.) Brown round or rump of beef in fat from a slice of fried pork. Place in casserole with chopped carrot, turnip, onion, celery, etc., around it. Add two cupfuls of water or stock, cover, and cook in hot oven three hours, basting occasionally.

BOILED SOY BEANS—Soak two cupfuls of dried beans overnight or even twenty-four hours. Drain, add boiling water, one tablespoonful of salt and a pinch of baking soda, and simmer four hours. Or the beans may be cooked in a fireless cooker more economically. Boil for one-half hour and finish cooking in the fireless cooker. Thorough cooking is essential. The beans may also be cooked with one-half pound of fat salt pork, cut in cubes. Serve with tomato ketchup.

SOY BEANS WITH TOMATO SAUCE—Prepare a tomato sauce by cooking one cupful of stewed and drained tomatoes with a slice of onion, three cloves and a bit of bay leaf, and strain. Melt two tablespoonfuls of butter, add two tablespoonfuls of flour, and when browned add the tomatoes gradually with one-half teaspoonful of salt and a little pepper. Cook thoroughly. To one cupful of tomato sauce add two cupfuls of boiled beans, and reheat.

COTTAGE CHEESE AND NUT ROAST—One cupful of cottage cheese, one cupful of chopped English walnuts, one cupful of bread crumbs, two tablespoonfuls of chopped onion, one tablespoonful of butter, juice of half a lemon, salt and pepper. Cook the onion in the butter or other fat and a little water until tender. Mix the other ingredients, and moisten with water in which the onion has been cooked. Pour into a shallow baking dish and brown in the oven.

BISCUITS WITHOUT SHORTENING—Into two cupfuls of buttermilk put one-half teaspoonful of soda, beat till light and foamy, add one-half teaspoonful of salt, one quart of flour, one teaspoonful of baking powder, sifting all together. Mix with a spoon, put on floured board, roll out and cut. Bake in a moderate oven twenty to twenty-five minutes.

HASH CROQUETTES—Two cupfuls of ground meats, one small onion, one teaspoonful of powdered sage, one tablespoonful of fine bread crumbs, two eggs well beaten, and salt and pepper to season. Mix all together well, if too dry add a few drops of sweet milk. Mold into cakes, roll in flour, and fry in deep hot fat. Drain and serve at once.

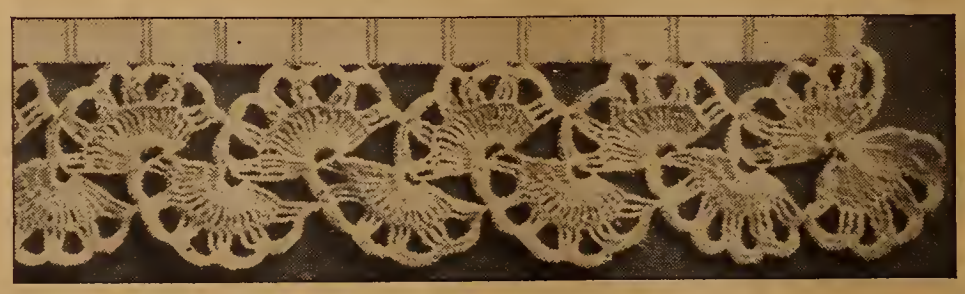
Three Questions

I WOULD like to know how to boil sorghum molasses of sugar cane. I know it must be pressed, but how long must it boil? C. D., Indiana.

How can I make a substitute for coffee? There is one made of wheat and molasses, prepared and roasted, which is said to be superior to coffee, and I should like to know how to make it.
H. E., Ohio.

If any old subscriber has the cookbook given as a FARM AND FIRESIDE premium about 1892, may I have the recipe for making doughnuts with yeast sponge? L. E. G., Kansas.

Double Fan Lace



THIS lace is particularly attractive on towels, pillow slips, and table scarfs, and is not difficult to make. Complete directions for crocheting will be sent on receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

Work for Small Fingers

A VERY young girl may learn to crochet simple patterns of edging. A No. 6 steel needle and a spool of sewing thread, size No. 30, are good to begin with.

The following pattern is very simple and pretty, and an insertion may be made to match.

Begin a chain by taking the end of the thread between the thumb and forefinger of the left hand with thread on top of finger. Wind the thread about the finger so that the cross is on top of the finger. Put the needle under the thread beyond the cross and, catching the other arm of the cross, draw it through the thread looped around the finger, at the same time slipping the thread from the finger.

You now have one chain stitch on the needle. You may tighten this by pulling on the thread nearest the spool. Make ten more chain stitches by catching thread and drawing through loop on needle. "Treble," in these directions, will mean thread over the needle once, insert needle, catch a loop of thread and draw through, making three stitches on the needle. Catch the thread and draw through two, catch again, and draw through two again, which makes the treble stitch complete, leaving one loop on the needle.

Simple edging

Eleven chain, one treble in each of the four chain farthest from the needle, turn, chain four, then make four trebles in the top of the last treble of first row (putting the needle under both threads of the top of the stitch makes firmer lace), chain three, and make four trebles in loop of preceding row. Turn, chain seven, and make four trebles under the three chain of the second row. Turn. The fourth row is like the second. Every other row is the same.

When making insertion, make four chain instead of seven when turning at the top of the lace; work like the edge.

WHEN USING PATTERNS—Do not cut notches in cloth to correspond with those in paper patterns. Mark the places where they should be with pins inserted perpendicular to the edge of the cloth. M. K., Montana.

FOR SHRINKABLE MATERIAL—Before hemming the bottom of a dress that is likely to shrink when washed, run an inch (or larger) tuck in the hem on the wrong side, with a very coarse stitch, nearly at the top of the hem. Then run the hem in the usual way, but be sure not to take the stitches of the tuck with the hemming.

Then, if the material shrinks, you can easily rip the coarse stitching in the tuck and let it down without undoing the hem. MRS. N. P. O., Kansas.

A MEMORY AID—When crocheting, one often uses quite a lot of different numbers of crochet thread. To avoid mistakes, write the number of thread, and also the make, on the inside of the cardboard roll on which the thread is wound. Then if the little round tag containing the number and trade name is lost, which often happens, you will not have to depend on memory, nor will you have to match the thread by weight and size. T. H. P., Nevada.

TO AVOID FRAYING—If one will stitch with the sewing machine, using a rather large stitch, around the outer edge of the scallops before embroidering, the goods will not fray after being washed. My experience has been that if the fancy work is then washed before cutting it out, danger of fraying, after being washed many times, is avoided.
MRS. R. L. C., Ohio.

E

Hedji: a New Fairy Tale

By Laura Campbell

THERE was once a little orphan child whose name was Hedji. She lived with a crabbed old woman, a bean grower, in a hovel on the banks of a river. The old woman made Hedji work very hard, so that her hands were always red and her little face worn and pitiful. In the mornings she worked in the kitchen, and in the afternoons she worked in the bean field until five o'clock.

At that hour the old woman went to gossip with her cronies; and Hedji then sat on a boulder beside the river, sometimes watching the fishes in the water, and sometimes making up little songs that she always sang in her heart but did not dare, for a long time, to sing aloud. But one day she saw a yellow bird watching her from a tree, and he had no sooner caught her eye than he flung back his head and began to sing in tones so piercingly sweet that Hedji scarce dared to breathe lest she should miss a note.

And suddenly, she thought with amazement, "Why, that is one of my songs that he is singing!" And so filled with joy was she to hear it that she instantly flung back her head and sang in tones so piercingly sweet that all the birds flew into the tree to listen. When she had finished, the little yellow bird flew swiftly away; but Hedji stared happily down at the water, for she knew now that she would sing aloud every day as the bird had taught her. And that is what she did for a long time, and her voice grew sweeter with every singing.

On returning one day from the boulder, she had no sooner stepped into the house than she saw it was as empty as a deserted bird's nest. Not a stick of furniture remained. Not one crust was in the cupboard. Hedji ran fearfully from room to room, and she was soon convinced that the old woman had gone.

Now, although the old woman had always been cruel to her, still Hedji could not help but feel that she was now forlorn indeed, and so she ran back to the boulder and cried as if her heart would break.

AS SHE was weeping thus, a fierce wind swept over the water and the waves rolled high about the boulder, and on the tip of one wave was a large shell which was dashed upon the rock; from out the broken pieces a curious little figure emerged. Hedji instantly knew that he was some sort of a water fairy, for bits of shells and pebbles clung to him, and at his side he carried a curious bag woven of weeds.

And he nodded at Hedji gayly, and said: "I've been trying to catch your notice since you sang your first song long ago, for you must know that your songs have given me such pleasure that I could not rest until I had given you a token of my gratitude."

And he handed Hedji the bag, telling her that it contained a little harp, but that she must not attempt to play on it until she should see a golden mouse with silver whiskers running before her eyes. Then the river fairy leaped back into the water and disappeared.

And Hedji smiled. "For if the river fairy liked my songs," she thought, "if I go into the world, I might find someone who would be willing to adopt me as a daughter in order that I might sing for him every day."

At that moment she spied an old tub floating toward the boulder, and as it passed she leaped lightly in and went sailing down the stream. She was wondering where she would land when she spied a ferryman in a big boat. When she hailed him, he approached and lifted her from the tub, setting her up snugly on the seat before him. Then Hedji, in her gratitude, began to carol forth her cheeriest song, and the ferryman kept time merrily with his feet and nodded approvingly.

And when she had finished he handed her a little bundle, saying: "It is only a new cap that I was carrying home to my daughter, but I can easily buy her a new one to-morrow. Pray accept it as a token of my gratitude."

Hedji thanked the ferryman, but she thought sadly: "Alas, since this good man has a daughter of his own, I cannot hope to be taken into his home!"

When the boat touched the shore, Hedji leaped lightly out and sped swiftly up the road, and presently she saw a dim light showing from the window of a little house. Stealing softly up, she peeped within and saw a little dwarf stirring something in a blue pot beside the fire. His head was so bald that not a single hair was growing on it, but as the light fell on his face, Hedji thought it was the kindliest face she had ever looked upon.

"How happy I should be if this little dwarf should adopt me as his daughter!" she thought. And she began to carol forth her cheeriest song. The dwarf came to the door and listened, and nodded his head approvingly, beating time upon the step with his bare feet. And when she had finished he drew her tenderly indoors, and Hedji told him her story.

The dwarf shook his head sadly and said: "Alas, my dear, I should like nothing better than to adopt you as my daughter, but I am so poor that I cannot even buy myself a cap, and have had to go bareheaded, winter and summer, these last ten years."

When Hedji heard this she was so filled with pity that she instantly offered him the new cap the ferryman had given her. The dwarf accepted it with deep delight. Then he turned to Hedji and said: "You are certainly a very kind-hearted girl. I will see what I can do for you in the morning."

THE next morning the dwarf went with Hedji to the gate and, pointing down the road, he said: "Keep straight ahead until you come to the Town of Wooden Blocks, and when you come to the Town of Wooden Blocks, walk straight ahead, turning neither to the right nor left, until you come to the house of the Red Owl. In that house lives one who will perhaps be glad to take you as a daughter." As Hedji turned away, the dwarf called after her: "If anyone should hinder you, you must toss your head haughtily and say to him proudly, 'A crab is crossing the Tropic of Capricorn.'"

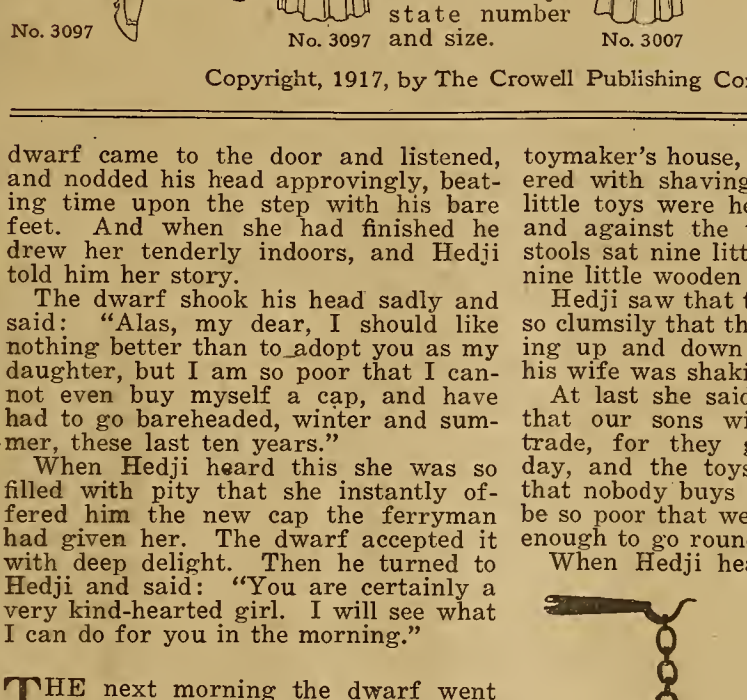
So Hedji left the little dwarf and kept straight on until she came to a high wall that was made of wooden blocks of many colors, and on every block a little picture was painted. Now, Hedji was just going through the gate when a burly soldier stepped forward, and demanded her errand. Hedji tossed her head and said saucily, "A crab is crossing the Tropic of Capricorn." Then the soldier stepped to one side politely, and Hedji went through the gate and found herself in the Town of Wooden Blocks. All of the houses were made of them, and even the streets were paved with them.

Hedji turned neither to right nor to left until she saw a little house above whose door was painted a little owl that was as red as blood. The door of the house stood open and, stepping through, Hedji saw immediately that it was a toymaker's house, for the floor was covered with shavings, while hundreds of little toys were heaped up everywhere, and against the wall on nine wooden stools sat nine little lads hammering at nine little wooden chests.

Hedji saw that the lads were working so clumsily that the toymaker was dancing up and down in impatience, while his wife was shaking her head sadly.

At last she said: "Husband, I fear that our sons will never learn their trade, for they grow clumsier every day, and the toys are so badly made that nobody buys them. Soon we shall be so poor that we shall not have bread enough to go round."

When Hedji heard these words, she thought: "Alas, this woman would never consider me for a daughter since she has not bread enough for her own!" and with downcast eyes she was turning to go, when a heap of shavings at her feet stirred and a little gold mouse with silver whiskers darted out and ran across the room before her eyes. Then she remembered what the river fairy had told her, and joyfully she took out her little harp and, sitting on a stool, she began to play it merrily, at the same time singing her cheeriest song.



She saw a little dwarf stirring something in a blue pot beside the fire

And no sooner did the first notes of the harp sound than the nine little lads began to beat time with their hammers. Tum-ti-tum-tum! Faster and faster went the little harp. Rap-a-tap-tap! Faster and faster beat the hammers! And the toymaker danced for joy when he saw how skillfully the lads were working. And in a short while, lo! the nine little chests were finished, and they were made as neatly as anyone would wish.

Then the toymaker kissed Hedji and said: "What would you say, wife, would you not like to have this child as your little daughter? What do you say, sons, would you not like to have this child as your little sister?" And the wife replied: "I should like nothing better in the world. I love her dearly already!" And she took Hedji into her arms and kissed her fondly.

And the nine little lads nodded their heads and said: "Indeed, we love her dearly already!" And one by one they kissed her very heartily on both cheeks. And so, with the toymaker and his wife for parents and the nine jolly little lads for brothers, Hedji lived happily forever and forever after.

For Economy's Sake

Designs That Are Favorites

EVERY design on this page has been tested and approved by FARM AND FIRESIDE readers. Women who find sewing at home most practical for their needs will appreciate them.

No. 3075

No. 3075—Men's Outing Shirt with Attached Collar. 14, 15, 16, 17, and 18 inch neck. An easy model to make, and one the man will find comfortable to wear. Made of khaki, it will stand rough use. Price of this pattern, fourteen cents

No. 3012

No. 2821—Child's Envelope Rompers. 6 months, 1, 2, and 4 year sizes. A serviceable little garment that saves wear and tear on better clothes. Pattern, fourteen cents

No. 3012—Shirt Waist with Large Notched Collar. 34 to 44 bust. A modish, simple design for wear with white or colored skirts. It launders well, and can be made of plain or more fancy goods. Price of pattern, fourteen cents

No. 2821 No. 2821 No. 2823

No. 2823

No. 2823—Child's One-Piece Dress with Yoke. 1, 2, 4, and 6 years. A simple, practical model suitable for everyday or better use. Price of pattern, fourteen cents

No. 3097—Empire Negligee with Kimono Sleeves. 32 to 44 bust. Very attractive in a thin printed crepe. Pattern, fourteen cents

No. 3007—One-Piece Apron with Cap. 32 to 44 bust. Completely covers and protects any dress. Price of pattern, fourteen cents

No. 3097

No. 3097

No. 3007

No. 3007

ORDER the helpful patterns on this page direct from the Pattern Department, FARM AND FIRESIDE, Springfield, Ohio. Always state number and size.

Copyright, 1917, by The Crowell Publishing Company

The Things We Almost Did

By G. W. Tuttle

A BOY with a kodak met a bear upon one of the Yosemite trails. He may never have heard that a stern chase is a long one, for the eager and breathless boy pursued the bear for a mile or more, but in vain. When he returned he said, "I almost got a picture of that bear!"

The boy did his best. It was not his fault that he failed. But how is it with you and me? Life is like a Marathon race, and many drop out by the way, but the fellow who persists, who runs when he is weary, who simply will not give up, is usually the one who arrives at the goal.

The sea is full of the wrecks of vessels that almost made their port. The sea of life is littered with the wreckage of lives which were almost successful, but who stopped just short of the goal. I am acquainted with a man of wonderful ability who has always stopped just short of success. He has forgotten to keep his eyes upon the goal. Now he walks the street with bowed head and dejected air. He is a self-branded failure. Many a man with only a tithe of his natural ability and talent is upon the highway to success. Perseverance bulks larger than talent in a human life.

Keep on trying. Even if you have to remain content in the end with "almost getting" your reward, you will feel better than if you had never made an effort to attain it.

New Puzzles

Four Rebuses in Rhyme

Your heart is heavy when my first is light;
My second, fools as well as wits can write;
'Twas vain, at first, within my whole to try,
For secrets it will tell you by and by.

My little criticizing first
Is found on either side;
My faithful second guards the crown
With dignity and pride;
My whole delights in summer flowers
And lovely autumn's fruitful bowers.

My first is fair and light as air
And often meets our view;
My next adorns the rugged thorns
When wet with early dew.
In modest mien my whole is seen,
In yonder garden gay;
Its lovely form oft braves the storm
Of winter's closing day.

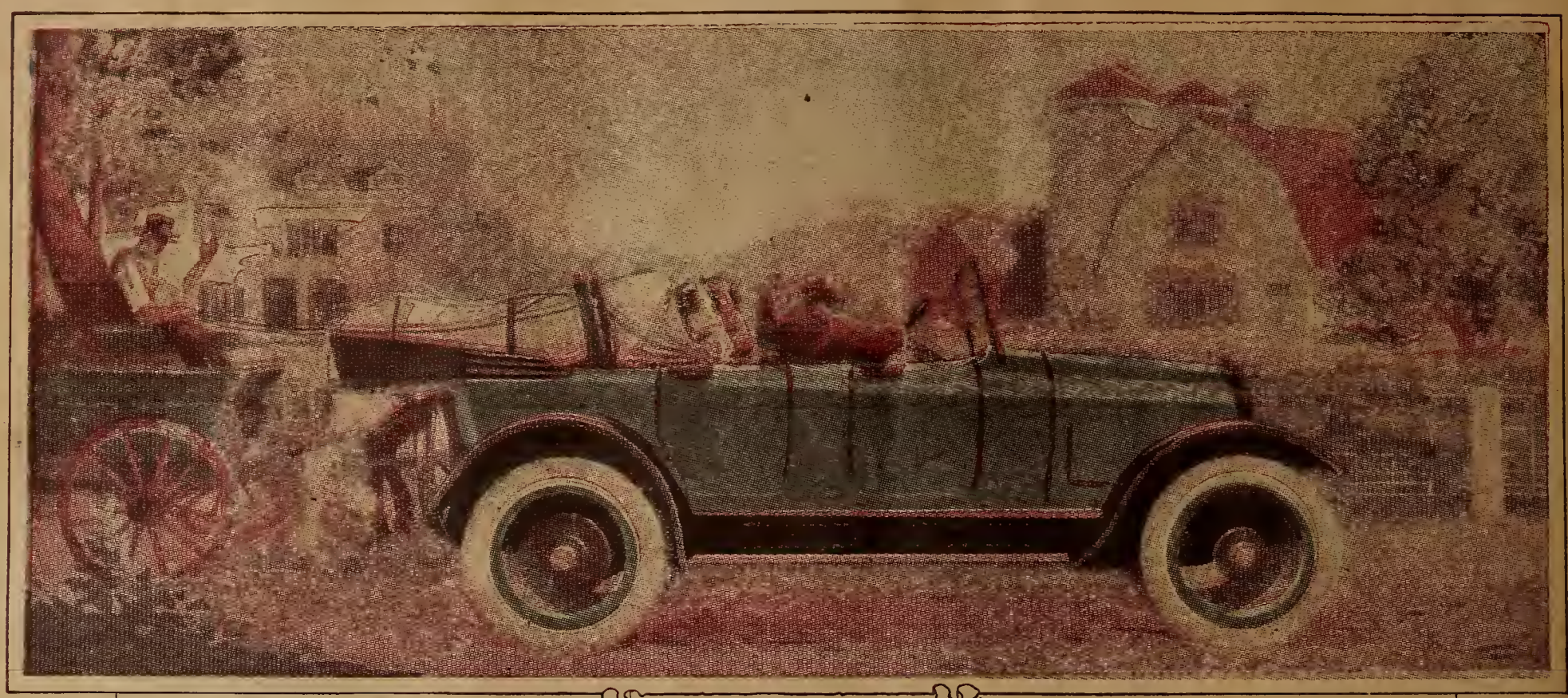
My whole is both common and useful, I ween,
Or yet may be precious and rare;
It both in the cottage and palace is seen,
And often adorneth the fair;
Behead, 'tis either exquisitely sweet,
Or harsh and ungrateful it sounds.
Curtailed it is massive;
To make it requires many pounds.

Answers to Puzzles

Puzzles Printed Last Issue

Dividing the Change—Answer

The total was $1.20. The wife removed three dimes from her husband's pile of 75 cents and added them to her own 45 cents.



Morning

Noon

Night

Overland

TRADE MARK REG.

— the Time Saver

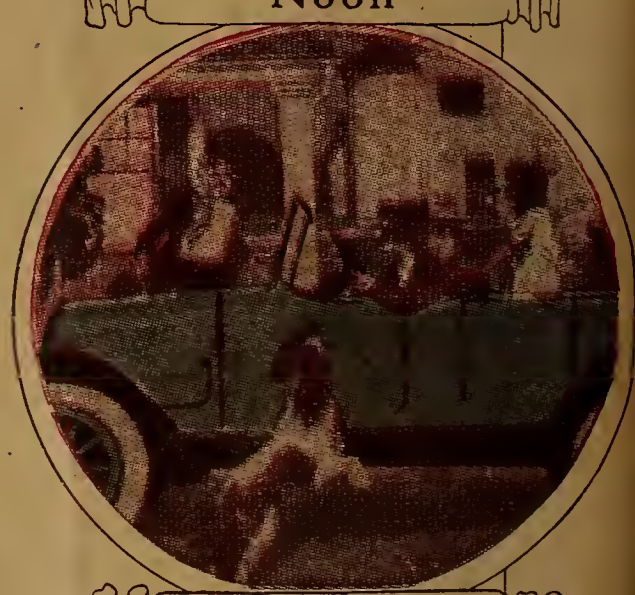
It's time now for speed and efficiency.
No one now has *time* to waste.
Speed up your work—and speed up your play to keep fit for your work—get an automobile.
No one now has *energy* to waste.
Get a car that's big enough not to cramp you, that rides easy and won't tire you.
No one now has *money* to waste.
Get Overland Model Eighty-Five Four.
True efficiency and true economy point to this one car as the compass points to the North Pole.
No other car of such comfortable size sells for so little.
No other car of such comfortable size has such power with such economy of operation.
No other car of such comfortable size is so sturdy—so economical of upkeep.
No other car of such comfortable size has been built in such quantities and for so long a time.
No other car of such comfortable size sells for anywhere near so low a price.
It's the car for *you* and the time to buy it is now.
Have efficient equipment for efficient living.
Get your Overland Model Eighty-Five Four today.

Catalogue on request. Please address Dept. 1095

Willys-Overland, Inc., Toledo, Ohio

Overland and Willys-Knight Motor Cars and Light Commercial Cars

Noon



Night

Five Passenger
112 inch wheelbase

Famous 35 horsepower four cylinder Overland motor

Cantilever rear springs

Auto-Lite starting and lighting

Four inch tires

Electric control buttons on the steering column

Model Eighty-Five Four

Five passenger touring

$895

Three passenger roadster

$880

All prices f. o. b. Toledo
Subject to change without notice

Library

More Than 600,000 Copies Each Issue

LIBRARY
RECEIVED
JUL 20 1917
U. S. Department of Agriculture

FARM and FIRESIDE

The National Farm Paper - Twice a Month

ESTABLISHED 1877

5 cents a copy

Saturday, July 21, 1917

Western Edition

PHOTOGRAPH BY CLARENCE A. PURCHASE

Ready for Service

"By far the best thing in shoe-soles that I have ever worn."

THAT you probably can save one-half your shoe bills by wearing Neōlin Soles is not simply claim. It is *fact*, proven by tests—see the one below. And it is proven, too, by letters from Neōlin wearers. Here is simply one out of hundreds. Please read carefully:

315 Champlain Ave.,
Cleveland, Ohio

"I had Neōlin Soles put on my shoes about four months ago. I have worn the shoes continually since that time and at the present time they show no noticeable wear. I think they are by far the best thing in soles that I have ever worn, as ordinarily I have to have leather soles replaced every six weeks. . . . . You certainly have a friend in Neōlin as far as I am concerned."

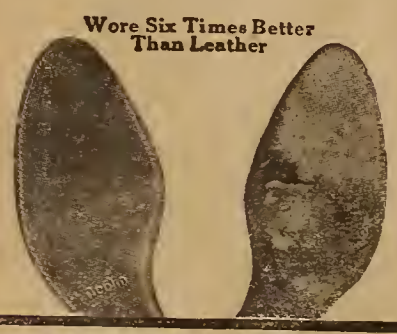
N. B. CAMPION.

Other letters show anywhere from a two to six times greater wear for Neōlin over leather soles. But then Neōlin is a true synthetic sole. It is not rubber although as watertight and as flexible. Neither is it a substitute for leather. It is actually leather's superior.

Neōlin Soles won't slip on wet pavements. They won't scratch floors. They are extremely flexible and springy. In men's, women's, children's sizes. Get them on new shoes or at shoe-repairers and some retailers, in Taps and Full Soles for old shoes. To protect yourself from "composition" or "fibre" attempts at imitations, look for the word Neōlin on the shoe sole. *Mark* that mark; stamp it on your memory—Neōlin

The Goodyear Tire & Rubber Co.
Akron, Ohio

Wore Six Times Better Than Leather



Neōlin Sole, to the left, wore one-sixth through on one foot of experimenter.

Leather Sole, to the right, wore clean through on other foot of experimenter.

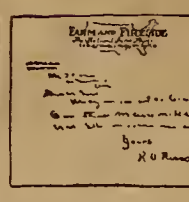
Neōlin

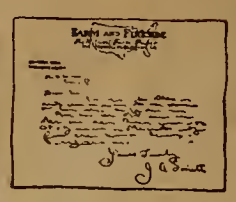
TRADE MARK REG. U. S. PAT. OFF.

Better than Leather

The Editor's Letter

A Mother Offers Her Son for Adoption





MOTHER love, infinitely tender and yet of tremendous power over all human beings, is one of the great forces for good in the world. As long as such love exists, the earth can never become desolate nor humanity devoid of its finer instincts. The affection of a mother for her child is perhaps the highest type of unselfishness and the inspiration for countless deeds of heroism—not the sort that wins medals and public acclaim, but rather that kind of heroism which expects no reward except the appreciation of duty well done as bestowed by the inner conscience.

I have been asked by a mother, a reader of FARM AND FIRESIDE, to help her perform a duty which she feels she owes to her son. She wants to give him away to some family that can take better care of him and give him better opportunities than she can. And this is her frank appeal:

"DEAR EDITOR: Can you find among your many readers a home for my little boy? I will find it hard to give him up, but there is no choice, and he may be adopted by any couple who are able to care for him and can furnish good references. I am a widow, unable to work, and have no home or property of any kind.

"He is just twelve, and about the size of the average ten-year-old boy, has been in school less than four school years, and has just finished the fifth grade. He is healthy, hardy, and has no chance to inherit disease of any kind. He is a little slender, very muscular, plump, and has a magnificently formed body. He is handsome, and has very bright gray eyes which look black on account of the lashes. His hair is medium brown, complexion fair, rosy, and slightly freckled. He is industrious, loves good books, baseball, and automobiles. He is interested in mechanics of all kinds, likes a farm, more particularly a cattle ranch, and can ride a broncho."

From what has been said, this is obviously a *real* boy, and the mother also is true to the title of "mother" when she calls her twelve-year-old son her "little boy." As a matter of fact, all mothers' sons are her "boys" as long as she lives and however old they may become. But she is not blind to qualities which others might consider faults, for she continues: "He is self-reliant, a little scrappy and quick-tempered, but is intensely affectionate to those who show an interest in him, and is loyal and truthful. He has traveled considerably and can travel alone. Is there not some childless couple with an unselfish love who would like to have him?"

This mother lives in the Southwest, but by request her name and address are withheld since she is proudly unwilling to have her friends know of her destitute circumstances. But her signature is a good American name, and in conclusion she says: "If you would be so kind as to publish this letter and forward any letters of inquiry, I will answer them."

TO GIVE a child away that it may have a home and more opportunities than she can give him is a sacrifice that only a parent, probably only a mother, can fully appreciate. All she asks in return is that unselfish love be given her son. But unselfish love for another's child is such a rare thing that I want to add a few remarks bearing on the subject of adoption.

A great deal is written of the happiness of childless couples in finding an orphan to adopt and the subsequent joy of having a young life to train and become attached to. But we seldom hear the whole story—of what happens fifteen or twenty years later. The initial happiness sometimes wanes as the child matures, and may even change to a sore disappointment when the adopted son or daughter shows a lack of appreciation. I have in mind a middle-aged couple in Kansas who adopted a half-grown boy and cared for him as their son. But on reaching manhood he became wild, and would leave home for days at a time, returning only in the hope of inducing his foster parents to give him money.

Another adopted son resented the fact that his clothes were not quite so good as those of his associates. He also regarded his home ties lightly, and finally ran away to make his own way in the world. When last heard from he had become a sailor on a fruit ship. On the other hand, in these days of labor shortage, the farmer who adopts an active lad takes a long step toward solving the help problem, for a strong boy who understands machinery and can manage horses is about as efficient as a man in a great many farm operations. So we have three alternatives:

THE foster parents may have a fondness for the child akin to parental love, and the child may prove a disappointment. Or the child may be true and loyal but be imposed on and treated as a hireling. Or there may be fondness and consideration on both sides, and the adoption may be considered a success. But even in the last case the closeness of kinship is lacking. There are no substitutes for blood ties. Fatherhood, motherhood, childhood, young manhood, and young womanhood—these are all bonds which are forged by the forces of Nature. They are much stronger than the mere formal and legal ties of adoption.

And while we sometimes have close attachments for friends, there are few cases in which friendship is entirely free from self-interest. It may be an obscure self-interest, but it is there. It may be a similarity of business interests which draws men together first as partners and then as friends. Or a mutual liking for travel or athletic sports or social diversion may be the basis of a friendship that will endure for many years.

But as a rule friedships for a lifetime are comparatively rare, for the reason that a person's interests change with the passing years; and even though on many occasions we honestly prefer the companionship of our friends to that of our relatives, time will nearly always teach us that in the end those of common blood are the closer and more precious.

For these reasons I should dislike to see the mother whose appeal you have read give her son away permanently. The affections and habits of a boy of twelve have already developed to a point where they would be hard to change. Adoptions from babyhood are generally the most successful. Is there not some family that would like to borrow the boy for a few years until the mother could establish herself on a better financial basis? I know of cases where half-grown children are borrowed from institutions such as orphan asylums and children's homes and are clothed, boarded, and sent to school. In return they brighten the family circle and are generally useful, doing such light work as would be required of a son or daughter of similar age. But the child is not legally adopted, and the arrangement may be terminated at any time and the child returned to the institution.

Perhaps a similar arrangement can be made by which this handsome, bright-eyed young American may be received into a private home where he will receive good care and be sent to school in return for such services as his strength and activity will permit, yet incur no obligations that would prevent him always being the legal son of his noble mother. But this is simply a suggestion.

Responsible persons who are interested in this boy may write the mother in my care, and the letters will be promptly forwarded. Address The Editor, FARM AND FIRESIDE, Springfield, Ohio, and mark the letter "Personal." Those who extend offers will, I hope, fully consider the sacrifice the mother is making and will arrange for a frequent exchange of letters, should the offer be accepted, so that the mother may share in some of the happiness that her son will create in his new home.

The Editor

Instant Postum

A table drink that has taken the place of coffee in thousands of American homes.

"There's a Reason"

Delightful flavor
Rich aroma
Healthful
Economical

Sold by grocers everywhere

BECOME A GAME FARMER

Write for these two books which tell all about this interesting and profitable work. "Game Farming for Profit and Pleasure" is sent free on request. It treats of the subject as a whole; describes the many game birds, tells of their food and habits, etc. "American Pheasant Breeding and Shooting" is sent on receipt of 10c in stamps. It is a complete manual on the subject.

HERCULES POWDER CO.
1032 Market Street
Wilmington Delaware

APPLETON Silo Filler

In quantity and quality of silage made per hour

the Appleton has any silo filler beat, by actual *records*. Great capacity, with tremendous strength to stand the hardest, continuous service, made Appleton the choice of *investigated* silo filler. Have those thousands who it before they bought *any* *you* investigated it?

Guaranteed to do more and better work with less power

than any other silo filler. Costs no more to buy and much less to operate. Its all-round economy guarantees you silage at the lowest cost per ton and makes you most profit on work for others. Don't buy until you *know* what Appleton offers. Send for

Two Free Books

about silo building and silage; and about Appleton Silo Fillers, showing 4 sizes for 4 h. p. gasoline engines and up.

APPLETON MFG. CO., 409 Fargo St., Batavia, Ill.

W

FARM and FIRESIDE

Published Twice a Month by THE CROWELL PUBLISHING COMPANY, Springfield, Ohio

Copyright 1917 by The Crowell Publishing Company

Vol. 40 Springfield, Ohio, Saturday, July 21, 1917 No. 20

Flying Navy to End the War

Huge Air Fleets Will Carry Out an Offensive on German Soil

By JOHN SNURE

WHO supposed a year ago that by this time the United States would be calmly and seriously proposing to build a great "navy of the air," composed of tens of thousands of airships, manned by skilled airmen, to be shipped across the broad Atlantic to the scenes of the war in France, and to win the war in the atmosphere, miles above the surface of the earth?

Yet that is exactly what is under consideration, and, what is more, plenty of the most able and brilliant men of the country are convinced it can be done. We propose to expend from a half-billion upward for airplanes and the guns to equip them, and to sweep over the German lines in France, and even into Germany, with brigades and divisions of airships, like fierce eagles, destroying German munition factories and supply depots, and also making it impossible for the German armies to get information of the movements of allied troops, and thus crippling their whole military plans.

Even more, it is proposed to guard our coasts with fleets of airships and to defeat the submarine menace with aërial navies. Going still farther, Rear Admiral Peary, discoverer of the North Pole, told the writer not long since that he believed the airship could be developed as a freight carrier to such an extent as to make the starvation of a country by means of a submarine food blockade impossible.

Meantime, great plans are under way for the development of inventions to meet the submarine danger by naval methods. The Government is encouraging hundreds and hundreds of the brightest scientific and inventive minds to effect such an achievement.

Uncle Sam's governmental machinery is getting an overhauling these days such as it never had before. The demands which war is making on the Government, and which it is going to make, are compelling changes which Washington and Adams and Jefferson surely never seriously contemplated, and probably never dreamed of.

Certainly, not since the days of the Civil War has there been such an overhauling, and the changes which are now being made are in many respects more remarkable than those which Lincoln and his associates found necessary.

When I was a boy and it came time for haying and for harvesting, I can well remember that my father used to go out to the tool shed and that there ensued a great wrestle with the mower, and the reaper, and the scythes, and the hay rakes, and all the appurtenances; how the sickles were ground up and the rust rubbed off; the harvesting machinery mended and all the creaking bearings and wheels oiled up for the coming fray with the clover and timothy and wheat and oats.

Having to tackle a war, Uncle Sam has in the last two or three months been obliged to go through much the same process with respect to the handling of government business. The difference is that in his case the machinery has been lying unused and rusting for so many years that much of it is worn out and has to be discarded entirely and replaced by new. Moreover, the fields of war which now stretch out before the nation are so much vaster than any in the past that in many cases it is necessary to throw aside many old tools and adopt those of an absolutely different and more up-to-date pattern. Methods that once were good are now found useless and new ones are needed.

A lot of people sit around and growl and grumble because the officials at Washington and Congress aren't making more rapid progress in carrying on the war and getting into action against Germany. They sometimes forget that the country has been going along in a peaceful way for so many years that when it comes to preparing for a great war an almost complete transformation has to be made.

Preparations on an unheard-of scale are necessary, and they can't be made in a minute. Plenty of blunders are to be expected, and there will be and are already things to criticize, but a reasonable length of time must be allowed for a job of this magnitude.

The scope of the legislation already enacted by Congress since the opening of the war with Germany, and of the steps taken by the Administration, is so broad that unless one stops occasionally and thinks of it he is pretty apt to lose track of things entirely. And it is to be remembered the war is only started, and the judgment of the War Department and many men who have studied conditions closely is that it is likely to last a long time.

On the financial side alone, what has been done by the Government is almost unbelievable, or would have been if anyone had predicted it six months ago. Congress passed a war revenue bill at the outset which authorized an issue of $7,000,000,000 in bonds and treasury certificates. Through the war-tax bill which has been pending for some weeks there will be raised upward of $1,500,000,000 in war taxes on incomes, excess profits, in stamp taxes, and in various other ways.

Rising to the occasion, furthermore, the country has just floated with wonderful success the first great issue of Liberty Bonds amounting to $2,000,000,000. This is the first of a series of big bond sales the Government will make as the war goes on. For a few weeks there was doubt and wonder whether such an immense issue of bonds could be sold, but when the subscriptions were rounded up it was found the amount was oversubscribed not far from a billion dollars.

Already the Treasury Department is looking forward to another sale of bonds. It will come probably in September, and there is no doubt it will be a success. Other sales will follow at frequent intervals, for one of the new things which the present war has demonstrated is that there is practically no limit to the extent to which the building and using of armies and navies on a great scale eat up money. What adds to the burden for this country is that Congress authorized loans to the allied countries of $3,000,000,000, and much of this money has already been turned over to them.

So, on the financial side alone, the war has resulted in the Government's undertaking plans for bonding, loaning, taxing, and the like on a scale never before tried by this nation, even at the height of the war between North and South a half century ago.

The financial effort, however, is but one of many phases of the activity which has been brought about in the transformation of the nation into a great war machine.

With the passage of the conscription or draft law, the law to increase the navy and marine corps, and what is known as the war budget bill, to appropriate more than $3,000,000,000 for army and navy and merchant shipping, there have been feverish preparations along these lines to an extent which one could hardly have supposed possible a year or even six months ago.

So that the world may be saved from Prussianism

American naval vessels under Admiral Sims have already gone across the Atlantic, and have joined in the work of hunting down German submarines and protecting other vessels from them. General Pershing and the advance guard of a great American army have already crossed to France, and from now on there will be almost a steady procession of troops and supplies to the fighting regions of the western European front.

The regular army, the navy, the marine corps, and the national guard are being trained, and before many months all these forces will be in excellent condition. For the new national army of conscripted men, which is to be mobilized in September, there are being constructed at sixteen camp sites in different parts of the country what amount to sixteen wooden cities, each capable of housing 30,000 to 40,000 men. This task is one of huge proportions, each camp calling for an outlay of about $3,000,000, or $48,000,000 in all. These sixteen wooden camps are called cantonments as distinguished from the sixteen other great camps which the War Department has ordered established for the national guard and other forces, and which are under tents.

The proportions of this plan for development of the army can be better understood when it is reflected that it will cost the Government to keep these thirty-two camps going—sixteen cantonments and sixteen tent camps—about $75,000,000 a month for the payroll of the officers and men and the purchase of supplies, not including many other expenses.

Under General Goethals of Panama Canal fame there has been started the construction of an enormous merchant fleet. The vessels are to be for the most part steel vessels. Some will be wooden. For this purpose Congress has authorized the expenditure of $750,000,000. The next six months, or a year at most, will witness wonderful achievements in shipbuilding in this country. The vessels are absolutely necessary to replace in part the losses of shipping caused by the German submarine campaign. If the Germans are to be beaten and the Allies kept fed and supplied, and our troops in France kept furnished with the things they need, new ships have to be turned out rapidly and on a scale almost unheard of.

As part of the process of building up the American merchant fleet, 2,000,000 tons of steel shipping building in this country for other countries have been ordered commandeered. In other words, this country simply takes this shipping over and pays the builders, and the other nations can't help themselves. Here is an excellent illustration of how the war has changed the methods of doing things. General Goethals is practically dictator over the construction of ships for the merchant marine of this country. Virtually, three quarters of a billion dollars is placed in his hands to do as he wills with it. Before the war the mere suggestion of putting such power and funds at the disposal of one man would have been scouted as utterly out of the question.

The thing is the more interesting because some months ago Congress, urged on by the President, provided for a shipping board. Now, this board has been found unequal to the task of sudden construction of a great merchant fleet, and it [CONTINUED ON PAGE 12]

The Hired Man's Wife

Establishing Friendly Relations with the Tenant House

By HESTER GRIMES MASTERSON

"PUT yourself in her place."

It is living up to the spirit of those words that has helped me not only to get along with the hired man's wife, but to make some of the best friends I have ever had among the women who for a year or more lived in our tenant house.

I didn't always get along with the hired man's wife. There was a time when she was a thorn in my flesh, when if you had asked me to describe her I would have given you only a list of her faults. She was a poor housekeeper. She was lazy and extravagant. Her children were always in trouble in school, and she always took their part against the teacher. She was untidy. She was invariably a gossip and trouble maker in the neighborhood. The hired man was sometimes satisfactory, but his wife never was.

I was only a young woman myself, inexperienced, and, like many young people who have steered an easy course in life, I was apt to be very critical of less fortunate people. The tenants accused me of being "stuck up," and I was; and, needless to say, we paid for my attitude in having to find a new hired man every year.

When the Marches came, Frank, my husband, came to me and said a little anxiously: "Please, Hester, try to be nice to her. Help's awful scarce this year."

My answer was sarcastic.

"Oh, yes, I suppose Mrs. March and I ought to be bosom friends."

The Marches had been married only a year, and I had heard that Mrs. March had the reputation of being "wild."

"It was the best I could do," my husband insisted. "Help's so scarce this year."

My greeting when the young couple were introduced was not very cordial, and I saw little of them for some weeks. Then one morning, when I was hurrying around trying to get the washing on the line before noon, I tripped and sprained my ankle. My husband had gone to town, but somehow I managed to crawl to the telephone and summon the doctor and leave a message for Frank.

I was sitting in the kitchen, weeping with pain, when the door opened noisily and Mrs. March came in.

"I heard you phone for the doctor, and I thought I would step over and see if I could do anything," she announced.

Well, you know, in spite of my relief at seeing someone, I was furious that it should be Mrs. March. "Just like her meddlesomeness to be rubbering over the phone," was what I thought, and I submitted very ungraciously to her ministrations. I was surprised—and not quite pleased, either—to see how deft she was, and how gently she handled me. She ignored my grumpiness, making little soothing remarks, like a mother dealing with a sleepy child.

When the doctor came she helped him very efficiently, made me as comfortable as anyone could, and soon after I heard sounds that told me unmistakably that the washing was progressing. When my husband came in I could smell the dinner cooking, and by that time I was sufficiently ashamed of myself so that I let him think I had telephoned Mrs. March to come over, and forgot to make any sarcastic remarks about her "rubbering."

That good little woman "stepped over" every day for two weeks until my foot was strong enough for me to stand on. She took complete charge of the baby, did all the housework, and took care of the chickens, the milk, and my flowers. She hadn't very much training, and she did things with more energy than skill, but she was brimful of enthusiasm and, oh, so teachable. She was eager to learn my methods with the baby, and how I managed to keep my house shining clean, and what I did to make my roses grow so healthily. She simply bubbled over with admiration for anything and everything around the place. You would think to hear her that we were conferring a favor on her, instead of her upon us.

I LEARNED a good deal about her in those two weeks—about her motherless girlhood, and the careless, tomboy existence in Waterville, where her father kept a livery stable. I could see her growing up, sniffed at by careful mothers and well-brought-up daughters, developing a hard shell of callousness, covering up her loneliness by talking a little louder, laughing a little oftener, and dressing a little flashier than any other girl in the village.

Then when her free ways and uncultivated good looks began to attract the boys, I could see the careful mothers passing judgment on her and turning down their thumbs.

The end of this little story is that Mrs. March and I became fast friends. Her husband stayed in our employ for two years, and then they moved to a nearby farm which they have since bought. She became a splendid housekeeper, due partly, I may say without vanity, to the help I was able to give her by passing on the wisdom gleaned from the patient training of my own dear mother. And there isn't a woman in the neighborhood who does more for the community at large or is better liked than she.

I had plenty of time to think during those two weeks that I was unable to do anything else, and by the time I was able to walk around again I had thought out the question of the hired man's wife as I had never done before. And it is by following the gleams of light that came to me then that I have had such happy relations with the people in the tenant house during the past eight years.

When I put myself in her place, the first thing I discovered was her absolute loneliness. The hired man's family usually move into a community where they are little known, at least where they have no real friends. Many of the farmers' families regard themselves as "above" the hired man. To make it worse, the hired man's wife is not only often socially isolated, but she is very often confined strictly to the tenant house, simply because she has no means of getting away.

The teams are always busy or the farmer's family want to use them, so that if the hired man's wife wants to go anywhere she has to walk. She doesn't get to go to town to buy the groceries or to go to church or the movies. It is all very well to say that with the garden and chickens and house, and perhaps children, she ought to have enough to keep her interested; but the fact remains that if she doesn't get away from that little round of duties often enough to get some stimulus from the world outside she is going to be discontented. The life will pall on her, and she will fall into slipshod and half-hearted work methods. It is then that she will turn to that refuge of women who lack vital interests and plenty of stimulus—petty gossip. When the telephone rings she will "listen in" because it brings her the most interesting bits of news about her neighbors.

The one way out of this state of affairs is to give the hired man's family a chance to go places—to go to town once a week, to attend church, to take part in the neighborhood socials and meetings. It will mean planning and foresight, and in some cases a little sacrifice on the part of the farmer's family, but it is worth the cost.

A good many farmers hate to make improvements in the tenant house, and the result is that it often gets terribly uninviting, and even uncomfortable, before repairs and improvements are made. We try to paint and paper our tenant house often enough to keep it looking fresh and neat, and we consult the taste of the hired man's wife when we do it. It pays in the added care she gives to her housekeeping. We see that the windows are well screened and that the walks are kept in condition, and if the hired man wants to make an improvement we supply the material for it.

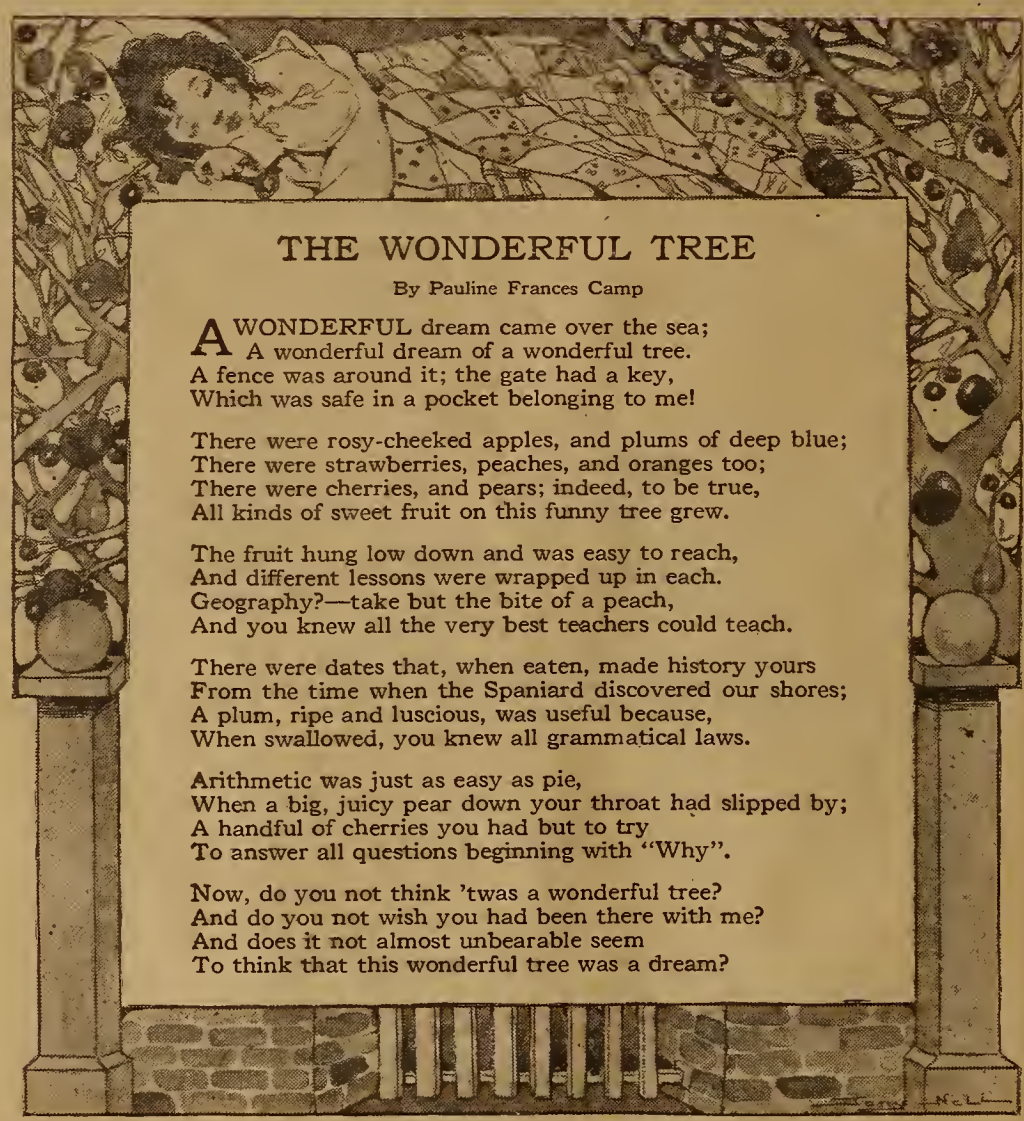
There are a good many things that I like to do in partnership with the hired man's wife. Canning is one of them. Canning is a good deal more fun if two people work at it than if just one is doing it. I have a good canning outfit, and we really get a lot of pleasure out of our day's work besides exchanging knowledge on the subject. Since we have a power washer, the hired man brings his family laundry over every Monday, and on Tuesday morning bright and early his wife and I are at it doing the laundry for both families. This makes it much easier for her, because otherwise she would have to use the primitive tub and board.

Many of the tenants that come to us are young people just starting out in married life. Often the wife is inexperienced in housework, and wasteful because she doesn't know how to be otherwise. I find that simply by registering a little interest in her problems I can get her interested in better methods. Sometimes just a hint or two is enough to set her on the right path. Sometimes she needs a regular course in sewing and cooking.

THE garden is a good outlet for the young woman's superfluous energy. Very often the hired man's wife is discontented and dissatisfied because she hasn't enough to do. But the hired man's garden is like any other garden; it needs a little attention from the menfolks occasionally to flourish properly. We don't go on the assumption that the hired man can do all that is necessary for his garden in the evening after a long day's work or on Sunday, but we see that it gets the necessary care just like any other part of the farm. The result is that the wife not only has wholesome occupation, but she has something to be proud of—quite different from the weedy patch one often sees designated as the tenant's garden. Many of our tenants make money from their garden, because they cannot use all it provides.

Exchanging fancy-work directions, lending a book, sending over the daily paper and the magazines that come to the house will go a long way toward establishing friendly relations between the farmhouse and the tenant house. Unselfish praise helps too. If I acknowledge that her canned tomatoes are better than mine, it gives the hired man's wife a warm feeling toward me as nothing else will. She's human just as you are. Remember that, and put yourself in her place. Give her enough to do and enough to think about, and she will not be discontented.

There is an old Chinese proverb that says that in order to live we need not only bread: we need bread and hyacinths. Think of that when you are dealing with the hired man's wife. Give her bread, but give her hyacinths too.



THE WONDERFUL TREE

By Pauline Frances Camp

A WONDERFUL dream came over the sea;
A wonderful dream of a wonderful tree.
A fence was around it; the gate had a key,
Which was safe in a pocket belonging to me!

There were rosy-cheeked apples, and plums of deep blue;
There were strawberries, peaches, and oranges too;
There were cherries, and pears; indeed, to be true,
All kinds of sweet fruit on this funny tree grew.

The fruit hung low down and was easy to reach,
And different lessons were wrapped up in each.
Geography?—take but the bite of a peach,
And you knew all the very best teachers could teach.

There were dates that, when eaten, made history yours
From the time when the Spaniard discovered our shores;
A plum, ripe and luscious, was useful because,
When swallowed, you knew all grammatical laws.

Arithmetic was just as easy as pie,
When a big, juicy pear down your throat had slipped by;
A handful of cherries you had but to try
To answer all questions beginning with "Why".

Now, do you not think 'twas a wonderful tree?
And do you not wish you had been there with me?
And does it not almost unbearable seem
To think that this wonderful tree was a dream?

The Auction

By J. L. JUSTICE

DOES it pay to hold a public auction sale in the summer? Recently, when most of the farmers were busy in the fields, I attended a public sale, going on the theory that there would not be a large crowd and things would probably go at a moderately low price. But I found some two hundred others who had probably thought the same thing. At two other sales just after this large crowds came.

The prices the articles and stock brought were not low. They were, in fact, higher than prices paid for such things during the winter's auction sales. The farmers who came were essentially bidders, seeming to welcome the opportunity to buy at this time. Hay in the mow sold for $22.50 a ton, while the quoted price in the local market was only $14, and the buyer had to go after the hay. Corn in the crib sold from five to ten cents a bushel above the local prices. Cattle, hogs, and horses brought good prices. It was evident that many farmers needed the things offered.

The question arises: How could these busy farmers afford to spend a day at the sale when they should be working in the fields? They didn't spend a whole day. The sales were arranged so that they commenced at twelve o'clock, allowing the farmers to get in a good half-day's work. Farmers who had automobiles quit work at eleven o'clock, ate their dinners, and motored over to the sales in a short time. Either two or three auctioneers were employed, so that the sale went along rapidly and was over by between two and three o'clock. This gave the man with a motor car time to get home and get in almost half a day in the field if he desired to work a little later than usual.

To make the sales attractive and induce farmers to buy, the owners gave the purchaser a credit of nine months without interest. There are many who will pay a little more for things if they do not have to pay interest on their money invested. A cash discount on all purchases also stimulates buying.

Live stock often sells well at public auction during the summer. Lacking the necessary feed during the late winter and spring months, many persons hesitate to buy live stock, but given the opportunity of buying after they have pasture they can see their way clear to increase their herds. The man who stores up plenty of feed and maintains his stock in good condition until pastures are good can sell his stock to advantage during the summer months. In any sale held during a busy season it is well to arrange it so the men interested can attend, and can get credit without interest.

EW

Hens Weed Berry Fields

Poultry Combined with Fruit Add to Profits of This Little Farm

By H. J. WILLIAMS

A basement barn was transformed into a three-story poultry house with suitable equipment for a flock of 1,000 layers. Exits from the different floors connect with separate yards so that three armies of several hundred hens each are ever ready to attack the weed and insect hosts whenever conditions are favorable

I GROW annually about two acres of strawberries and some tree and cane fruits for our village market in eastern New York. One difficulty I had to overcome at the start was to provide fertilizer for the fruit crops, as at first I kept no live stock except a few hens, and I could not depend on getting stable manure. The strawberries also required almost constant weeding, as they are grown in old garden soil full of all kinds of weed seeds, including quack grass. On account of these hindrances I had about concluded I could make the berries no longer profitable.

But I determined to try a new solution to the problem, which was to keep a sufficient number of hens to fertilize my few acres of fruits, for I have other small fruits, a small orchard, and some grapes. After several years of this combination I now feel qualified to answer the question, "Can strawberry fields be used for a run for poultry?" My experience is that when rightly managed hens will greatly benefit strawberries and save much labor. But if not properly handled they will destroy the plants. Hens will not eat strawberry plants if there is anything else green on the field, except when the plants first start to grow and the leaves are small and tender. At first I turned the hens on the strawberry field too early in the spring. When first turned out, chickens will always eat the green food nearest at hand so a portion of the strawberry plants near the hennery were eaten off so clean the plants died. But as the plants grew larger and the leaves tougher, they ceased to eat them. They would then forage and clean out all the weeds in the field, including even the quack grass. I now put a temporary portable fence of wire netting around a portion of the field and keep the hens confined where wanted until the whole field has successively been cleaned of weeds.

Some of the advantages of utilizing hens to weed strawberries of weeds are that it is cheaper, saves back- and knee-ache, and is good for both the hens and the strawberry plants. The hens get exercise, green food, and insects. The droppings help to fertilize the strawberry plants in about the cheapest and easiest way; but the fruit grower soon learns that hen manure is not a well-balanced plant food for fruit, as it contains an excess of nitrogen which causes too much growth of foliage or wood at the expense of the fruit. In wet seasons my strawberry plants, when liberally enriched with hen manure alone, made an enormous growth, but bore only a few berries. I have learned that the hen manure must be supplemented with phosphorus and potash. Just now commercial potash is too expensive to use for plan food, but I partially balance the hen manure by scattering acid phosphate or ground phosphate rock on the dropping boards, and so combine the phosphorus with the manure. When I can buy wood ashes at a fair price, I use all I can get for the potash contained, but I do not mix the ashes with the manure.

Before I began keeping hens, one of the difficulties was the cost of buying sufficient material to mulch the strawberry plants. Now I get a double use of the straw I buy. I first use it for a scratching litter for the hens, and when they have worked it up fine I spread it lightly over the plants during the late fall and winter. If there is some left after mulching, I pile it up at the end of the rows and apply it after the spring cultivation.

Success in poultry-farming with plenty of land is much easier to achieve than poultry-keeping without land on which to grow crops. Poultry-farming is using the hen manure to grow crops to feed the hens. It makes no difference whether grain crops are grown and fed directly to the hens, or fruit crops the proceeds of which can be used to buy the grain. In my case, an acre of fruit will buy more grain than could be raised on several acres. For me it is a better proposition to grow the fruit even if the labor item is heavier.

Increases Flock to 1,000 Layers

MY FLOCK of hens has been increased year after year until now I have all the equipment for a 1,000-hen plant. They are kept on a place of between three and four acres, and all the run I have for them is about three acres of young fruit trees and grapevines interplanted with strawberries. When the trees need the room, the strawberries will be removed. I feed the hens mostly in the buildings by a system that compels them to take plenty of exercise, and they are thus kept in good condition. I only turn them out when they will do no injury to the strawberries and other fruit crops.

My experience in converting a basement barn into a three-story poultry house may interest FARM AND FIRESIDE readers. When I decided to build up a large laying flock, I did not want to invest a lot of money into poultry houses at the start. There was already on the place a basement barn 24x30 feet, in fairly good condition. On one side it was built into a bank. This led me to believe I could put in another light floor for a third story, and so house all my hens and some young stock all under one roof. By means of the higher level of ground where the barn was set into the bank, the birds kept on the second floor had an exit on their own level. The hens occupying the third floor were provided with an inclined runway to the bank level that was also fairly easy for the caretaker to enter.

The basement fortunately had good drainage and was always dry, and I have found no bad results from using it. In making over an ordinary barn for poultry housing, the most important thing is to make sure of excluding drafts.

Another important thing is to plan for plenty of light, and so arrange that there can be good ventilation, without drafts. A thousand to fifteen hundred hens housed under one roof require a lot of fresh air to keep them vigorous and productive. I find it money well invested to give the additional feed required when plenty of fresh air is admitted through the open front, rather than have my hens troubled with colds and roup, caused by poor ventilation.

All over the country there are unused barns, shops, and sheds that could be remodeled into poultry houses at half the cost or less of what is now needed to erect new poultry houses.

In making a success of such a combination of fruit and poultry as I am handling, I consider plenty of tight, reliable fencing a necessity. One can take no comfort nor have any satisfaction in the poultry business when by reason of poor fencing his hens and chicks are constantly getting out and damaging his own crops and also making enemies of his neighbors.

For the permanent yards and boundary fences, put in substantial posts, and use fencing wire wide enough to keep the birds in place. Chickens accustomed to getting out with a little effort are always uneasy, and a worrying hen lays few eggs.

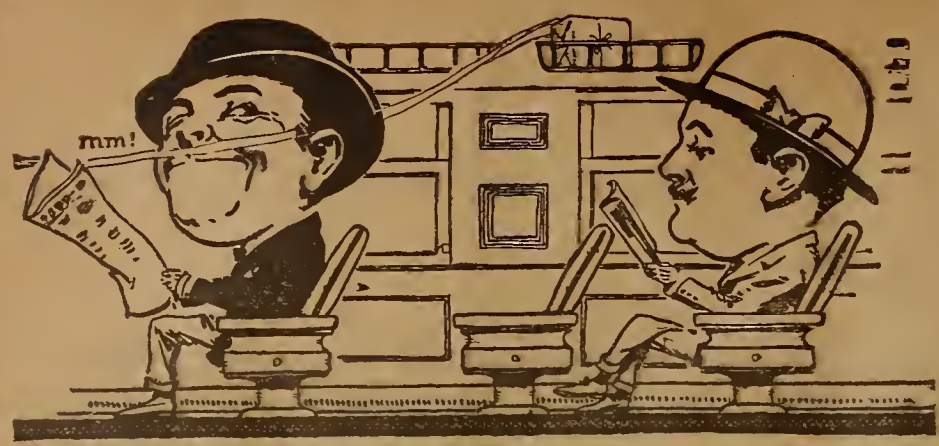
The portable fences used for dividing fields for pasturage, as before mentioned, can be made of lightweight material, and for some crops light panels covered with poultry wire answer the purpose well. On a small place the size of mine the boundary fences should all be made dog- and hog-proof as nearly as possible. Then, if the fruit and crops are planned right, there can be range for the birds most of the summer by means of the portable fencing without damage to crops.

The young chicks are kept in colony houses where new strawberry plants are being grown to make the fruiting bed for the following year. When the strawberry plants are set, I drill between the rows with the garden drill some crop as crimson clover to furnish green feed for the chicks later in the season. The green food for the laying hens in winter is sprouted oats and some cabbage and beets I am able to grow on small plots. When the orchard trees get larger, less strawberries and more cover crops will supply green food in summer. Strawberries are specially well adapted as a help at the beginning so as to realize a quick cash income.

Since my flock has grown to its present size, I find that my minimum annual profit is not far from $1 a hen. But this depends on the kind of poultry stock I am able to raise. For the year ending April 1, 1917, the gross return per hen was $2.50. The cost of feeding was not over $1.30.

I have realized as high as $700 gross per acre from strawberries, but that is considerably above the average. But judging by the basis of what the fruit and poultry income has thus far given me, I feel that when I can make the fullest use of my little place, for both fruit and poultry, I can reasonably expect my net income to run between $1,000 and $2,000, according to prices received for both fruit and poultry products.

A latticed arbor conveniently located keeps the fruit cool while being graded and packed. It also affords the pickers a few moments of grateful rest while the tallyman checks the baskets



HOW do you know he's taking home Coffee?

"Your Nose Knows"

Fragrance is the essence of coffee. It's the *fragrance* that makes it appeal to you. It's the *pure fragrance* of a good tobacco, likewise, which guarantees a personal smoke satisfaction. Your sense of *fragrance* is a sure guide. Trust it—"Your Nose Knows."

It will lead you straight to

Tuxedo

The Perfect Tobacco

Made of the most *fragrant* leaves of the tobacco plant—the tender Burley leaves, ripened in the Blue Grass Sunshine of Old Kentucky, mellowed and carefully blended—Tuxedo has a *pure fragrance* all its own—"Your Nose Knows."

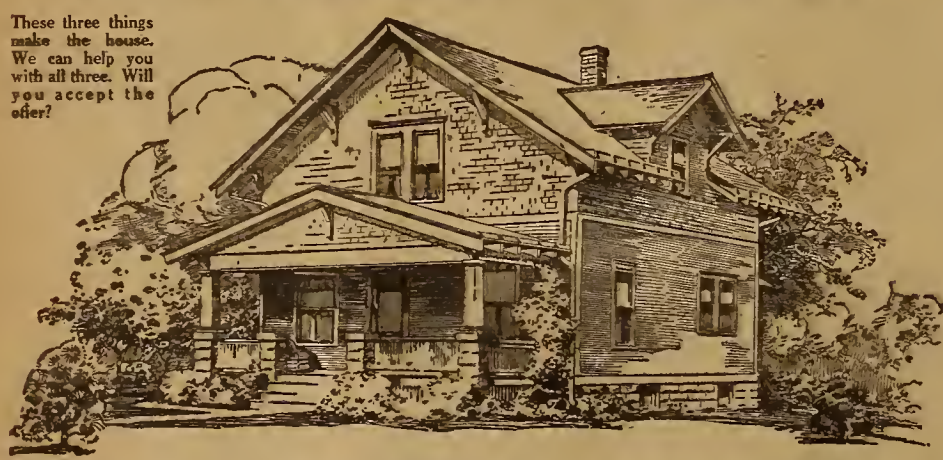
Try this Test: Rub a little Tuxedo briskly in the palm of your hand to bring out its full aroma. Then smell it deep—its delicious, *pure fragrance* will convince you. Try this test with any other tobacco and we will let Tuxedo stand or fall on your judgment—

"Your Nose Knows"

The American Tobacco Co.

Plans, Materials, Workmanship

These three things make the house. We can help you with all three. Will you accept the offer?



THE home above is practically a two-story house, yet costs but little more than one with a single floor. It is a practical, economical home and is shown in "Better Built Homes," Vol. 2, our Free Home Book of Plans. Send for this book.

Curtis Woodwork is made with such care from selected wood that whenever you buy even a door or sash you should insist on woodwork with this mark—CURTIS

On each and every piece of woodwork you buy, look for

1866 CURTIS WOODWORK

"The Permanent Furniture for Your Home"

Many different designs of Curtis Woodwork are shown in our Home Books, but your dealer can show you our big catalog containing every design if he sells Curtis Woodwork. Consult your dealer on your plans for alterations or new buildings and on Curtis Woodwork. Be sure your plans, materials and workmanship are right. Write for your Home Book—today. That's the right start.

The Curtis Companies, Service Bureau

1437-1537 S. Second Street, Clinton, Iowa

Manufacturing and Distributing Plants at

Clinton, Iowa—Lincoln, Neb.—Minneapolis—Wausau, Wis.—Chicago
Oklahoma City—Sioux City, Iowa—Detroit—Topeka, Kan.
Eastern offices at Pittsburgh and Washington

The Makers of CURTIS Woodwork guarantee complete satisfaction to its users. "We're not satisfied unless you are."

Home Plumbing

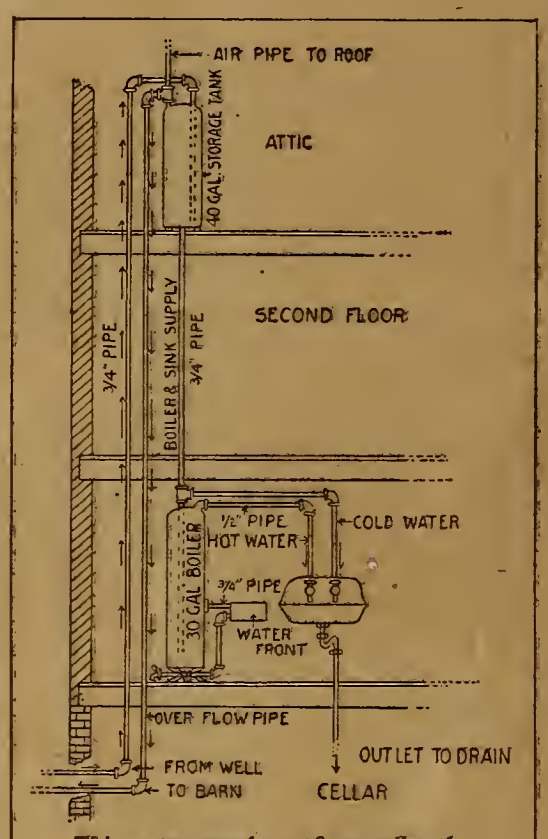
A Hot and Cold Water System for $65

By J. ROBERT HALL

"RUNNING water may be piped into the farm home and to the barn for less than the cost of a good cow." This is a statement made by a central Missouri farmer after having tried the system I am about to describe. It supplies fresh water for the house and barn every day, and is so inexpensive that anyone owning the farm on which he lives should not fail to give it consideration before letting the wife carry water from a distant well or even step outside the door. The cost includes hot and cold water on both floors, a sink in the kitchen, and a lead pipe to the barn.

On the Missouri farm where this system has been in service for the last two years it has saved much labor and added a real comfort to the home. A considerable amount was saved by the farmer putting in this plant himself. On this farm the house and barn are 200 feet apart, with the well halfway between. Water is pumped to a storage tank in the attic at the house. A range boiler with a capacity of 40 gallons is used for the storage tank. The supply pipe from the well comes into the top of the attic tank and empties near the bottom; thus the warm water is forced out of the tank, and only the cool, fresh water remains in it. When the storage tank is full it overflows to the tank at the barn and fills it. Each time water is pumped for the stock, 40 gallons is left on tap for use at the house.

One may say that a 40-gallon tank is too small to supply the needs of a family and give the desired pressure, but in this the real merit of the system lies. This size tank is inexpensive and affords sufficient pressure. The tank furnishes enough water to supply the needs of a family of seven for from one to three days. This is the great advantage of the system, as it always contains fresh water lately pumped from the well.



This water-supply outfit supplies the needs of a family of seven

A smaller range boiler than the one used in the attic is placed behind the stove in the kitchen, and is connected in the system as shown in the sketch. It furnishes hot water for the kitchen and for toilet purposes. The tank in the attic may be enclosed in a box filled with sawdust packing, which will keep the water cool in summer and prevent freezing in winter. The water front in the cooking stove supplies plenty of hot water. This system is a wonderful help on wash day, especially in winter.

List of Materials

The cost of putting this system in and running a pipe to the barn was as follows:

Pipe, 375 feet of three sizes, galvanized	$21.50
Range boiler, 40-gallon capacity	10.50
Range boiler, 30-gallon capacity	8.50
Sink, steel-enameled for kitchen	4.50
Water front for kitchen stove	2.75
Valves, couplings, etc.	2.00
Total cost of plant, not including work	$49.75

This expense account does not include the tank for the barn or the pump, as it is considered that the two are necessary before the system is installed on any farm. A good three-way pump will be required to force the water to this attic tank, and the pipe will have to be laid 2½ feet in the ground. The tools for doing the work, which may be bought for $6.50 and up, are not considered a part of the cost of the system, as they are useful on any farm and, in some cases, they can be rented from a local plumber.

In case there is no cellar drain to carry the water away from the sink, a drain will be an extra expense which will vary, as does the distance to an outlet. The cost will not be high. If the closet, lavatory, and bath are put in, they will necessitate a soilage system. If a gasoline engine or a windmill is available, either will be found a help in pumping the water. Neither was used the first year on the farm I have described, but a small gas engine does the work there now.

The size of the pipe leading from the pump to the house is three-fourths inch. That leading from the attic tank to the barn is one inch. Some of that in the house is one-half inch. If the well had been near the house, 100 feet of three-fourths-inch pipe could have been saved. This would have reduced the price about $5.50.

A Choice of Methods

If one feels that it is too great an undertaking to put the plant in, the services of a plumber may be had at a cost of about $15 to $25. In this case the farmer will dig the ditch to the barn and cover the pipe, and the plumber will cut and fit the fixtures.

Possibly nothing is used so much in the home as water, yet there is nothing obtained with so much difficulty on the average farm.

Prices of metal and piping have advanced somewhat since the system described was installed, and the necessary expenditure to-day for a similar outfit would be about $65.

Persons wishing a still simpler system may omit the lower range boiler and the hot water pipe. This will save altogether, counting faucet, piping and water front, about fifteen dollars, but in that case the supply would be limited to cold water.

There is no logical reason for compelling the women to go out of doors to get water. At small cost you can run an inch and a quarter pipe from the average well or cistern through the foundation wall and install the pump in the basement, or kitchen perhaps, where it will be convenient and will not freeze.

Lifted Above the Level

By Edgar L. Vincent

A MAN and woman moved from another walk of life out to a farm. They were scarcely warm in their new home when whisperings came to them of a trouble in the neighborhood which had torn men and women apart and led to many a thought and act of bitterness. And these good folks—for they were every one of them kind of heart and true in purpose—began to come with stories of their side of the difficulty, hoping, no doubt, to win the newcomers to their cause. The very first time this happened, however, the man and his wife said, very quietly and yet with great firmness: "Now, we have come here to be friends to all. We know nothing about the trouble which has been here in the past, and we do not want to know what it was. So please say no more about it. You will not feel any the better for repeating the tale again, and we will feel a great deal worse."

So they met all who came to rehearse the story. Gently yet positively they shut their ears to the criticism and the harsh words that would otherwise have been poured in upon them. It was sometimes a bit hard to do this. Floodgates of family and neighborhood quarrels are not easy to put back once they have been torn down. But they kept on patiently, until at last the people stopped lashing each other, the bitterness died away, and sunshine came back over the valley where the farmer folks lived.

W

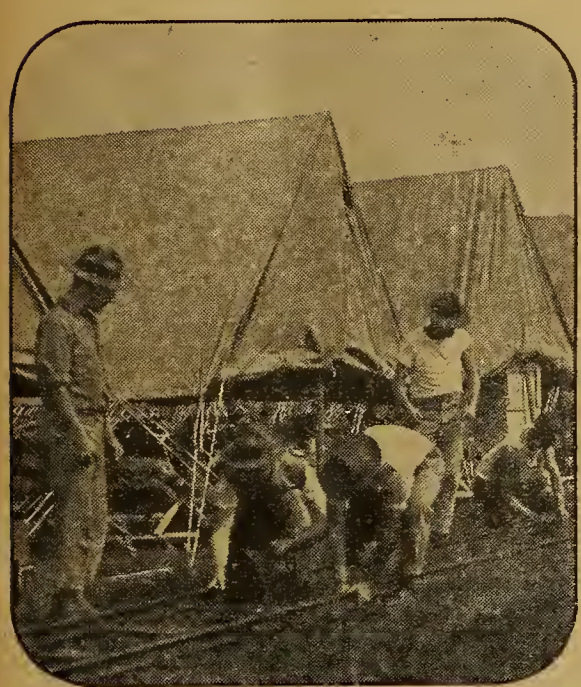
Getting Ready to "Lick" the Kaiser

Copyright by Underwood & Underwood, N. Y.

SIGHTS like this frequently send a patriotic thrill through the hearts of New York citizens these days. This photograph is of the battery of the First Field Artillery whirling out of the armory at Sixty-seventh Street and Broadway on an enthusiastic recruiting drive. The stirring sight of a battery thundering past, or of a detachment of khaki clad boys marching behind Old Glory, has brought his duty home to many a man and moved him to enlist.

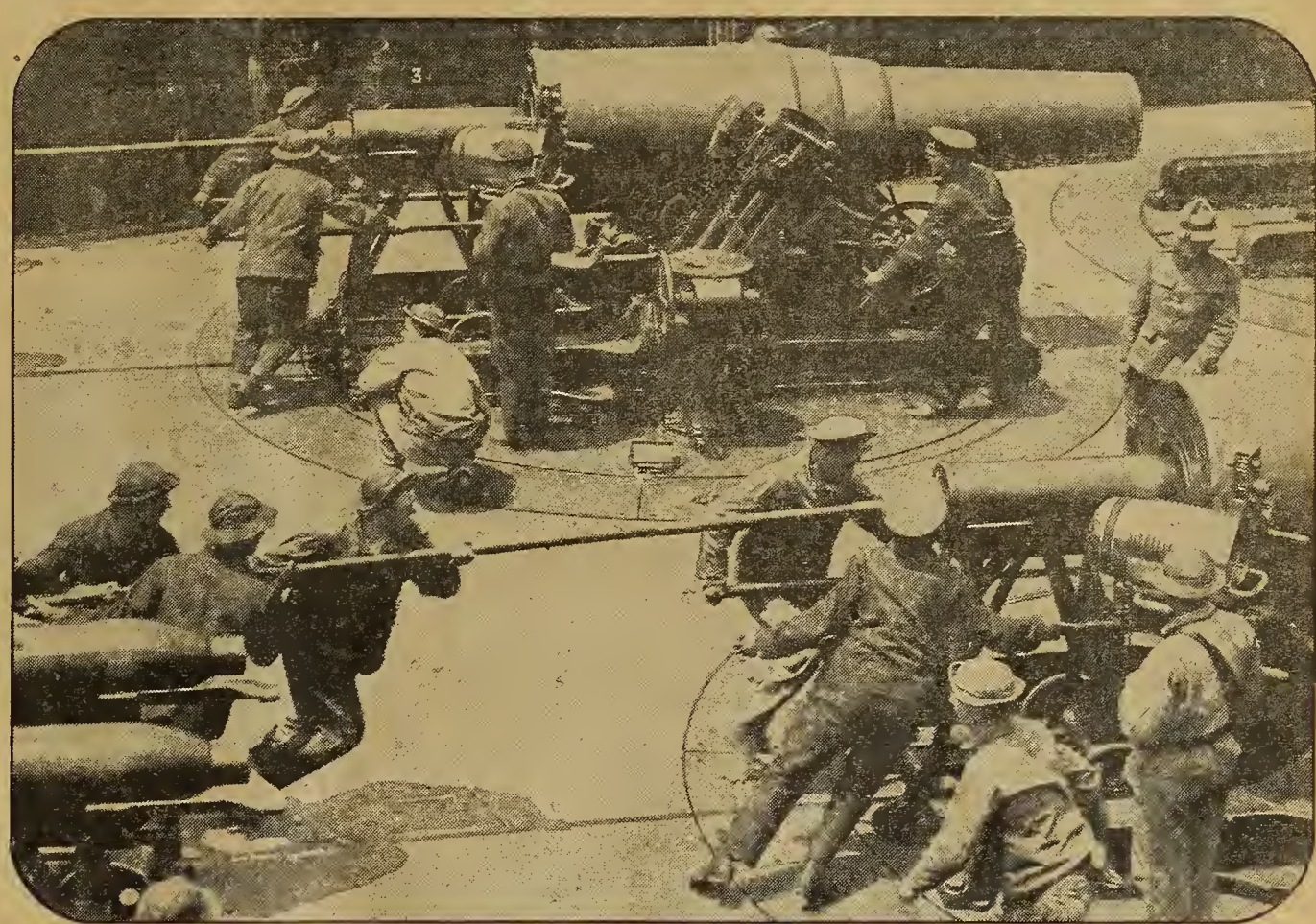
THESE fellows have all the marks of veterans, and they have earned them with a year's service in the mesquite-covered deserts and under the blazing sun of Mexico. They are part of Company A of the Sixth Infantry, and the picture shows them on a warm hike from one camp to another. They may be called into action at any time to join General Pershing on the battlefields of France. Across the sea preparations to receive more American troops are being rushed forward.

Copyright by Underwood & Underwood, N. Y.



Copyright by Underwood & Underwood, N. Y.

NO PART of Uncle Sam's war machine sees more varied and eventful life than the marines, and there is no hardier lot. These fellows are fresh from active service in Hayti. Here, as a part of their regular duty, they are laying tracks through the camp over which to convey supplies. Some of the marines were among the first of those to be sent to France with General Pershing's expedition, and their chief desire now is to let the Germans know that the Americans are on the job.



Copyright by Underwood & Underwood, N. Y.

THE work these men are doing ought to be comforting to the fearful ones living in sea towns who fear bombardment. They are testing the huge coast defense mortars in a fort "somewhere in the United States." These machines are complicated and vastly important, and consequently they are tested regularly and thoroughly to insure their fitness for instant service. The strenuous attitude of the workers in the picture shows that ramming the immense shells into the great mortars is no child's job.

Copyright by Underwood & Underwood, N. Y.

BLANKET-TOSSING is one reason why the boys come back from army camp life as hard as nails. It is a favorite pastime with the young huskies in the Seventh Cavalry. Every man has his turn in the air some time.

IF IT were not for the calmness of the instructor taking scores, you might take this for the real thing. However, it merely shows the West Point students in skirmish line behind sand bags at rifle practice. West Point cadets have never had a soft snap, and this year they are being speeded up to graduate nearly a year earlier in order to supply the imperative demand for trained officers.

Copyright by Underwood & Underwood, N. Y.

FARM and FIRESIDE
THE NATIONAL FARM PAPER

Harry M. Ziegler, *Managing Editor*
Associate Editors:
D. S. Burch B. F. W. Thorpe Ruth M. Boyle

Published Twice a Month by
The Crowell Publishing Company
Springfield, Ohio
GEORGE H. HAZEN, President
Executive Offices: 381 Fourth Avenue, New York City. Branch Office: Tribune Building, Chicago.
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

H. J. Brown, Jr., *Business Manager*
D. W. Henderson, *Advertising Manager* L. V. Rodda, *Circulation Manager*

Subscription Price
One year (24 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents a year.

About Advertising
Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.
Advertising rates and regulations furnished upon request.

July 21, 1917

Adding to Food Supply

HOW will the canning, curing, and preserving of home-grown and farm-raised products add to the country's store of food? If the farmer and his family do not themselves work up the fruits, vegetables, and other products of the farm, will not these things be marketed in the raw state, and will not all not immediately consumed be cared for most economically and efficiently by large factories, canning plants, and cold-storage establishments? Theoretically, it might seem so. In practice, though, such is not the case.

Only a small per cent of the farms in the United States are within easy reach of profitable markets for vegetables, fruits, and other highly perishable products. The local merchant in the small town can buy but a limited quantity, if any, of these garden and orchard crops. The average family in this same small town has its own garden, and often its own berry patch as well as fruit trees. So there is practically no home demand.

What does all this mean? The answer is that on the average general farm truck grown and not immediately consumed is allowed to go to waste. There is an abundance of everything during the summer season. Often, though, no provision is made for the year's supply. Canned goods and, not infrequently, jellies and preserves are bought of the local merchant when winter comes. This represents a double loss. Not only has much of the raw product been allowed to go to waste, but because of the increased demand—a demand from those who should have been producers—the man in the city must pay more.

The big problem at this time is to provide a plan for saving all that is produced—to practice some old-fashioned economy. The call is for more canneries and fewer can openers.

The Cur Dog

AN EXTENDED, unanimous, active campaign against worthless cur dogs everywhere is sadly needed, and particularly so in districts where sheep are kept or attempted to be kept. "Where is your wandering dog tonight?" would be a good question for every owner to ask himself. Many a cur that is not out singing sad songs to the moon is away in bad company, slitting the throats of somebody's sheep, living at the public expense, a nuisance, a menace, and an evil that should be lessened by rigorous taxation and, if need be, eliminated with the shotgun.

Economy demands that food be not wasted on such beasts. They are a public nuisance and should be dealt with accordingly.

Sheep husbandry is suffering by reason of dogs. In some districts it has been made well-nigh impossible or has been wholly abandoned. We need millions more sheep. We can do with thousands less of dogs. Only the trained utilitarian sheep dog and the dog with some good purpose in life should be retained, and all dogs should be kept free from parasites.

Disease readily and often is spread by dogs, so that all should be controlled, kept clean and healthy and away from young children.

The rabid dog is far too common a menace. The cur dog is a disgust and detriment. Let us rise and rid ourselves of such pests.

The Work Birds Do

BIRDS are almost as busy as bees, and their work in increasing crop yields is highly important. One of the cheapest and most effective ways to fight insect pests that annually take crop toll estimated at $800,000,000 is to aid in the preservation of bird life. Few people realize how many insects are destroyed by birds. A teaspoonful of chinch bugs has been taken from the crop of one quail, and an adult bird has been known to eat 5,000 plant lice in two hours. Such worms and bugs as infest our gardens are favorite food for bluebirds, robins, and many other kinds of birds.

Is is true that some insect pests may be fought with chemicals. Owing to the Great War, though, prices for many materials commonly used in sprays, washes, and poison mashes are pretty near prohibitive. But the birds work at before-the-war wages.

Birds also eat thousands of weed seeds. A single quail, when killed, was found to contain 10,000 pigweed seeds. With labor scarce and high, whatever will aid the farmer in his crop against weeds is worth while.

Future Land Banks

A DEEP look into the Farm Land Loan Act will discover that in the course of time the farmers themselves are to become owners of farm land banks. The National Treasury furnishes the funds with which each of the district banks, twelve in all, begins business.

But in due time the money thus advanced is to be paid back into the Treasury. When this occurs, the banks will be managed by the farmers, under the law of course, and in large measure will be operating on farmers' money. The farmers really will be doing a co-operative banking business among themselves.

Since nobody is making any profit from these transactions, it seems clear that the farmers are to get their loans at the lowest possible rate—namely, the actual cost of administration, which promises to be about one half of one per cent. Now that the rate of interest has been fixed at five per cent, doubtless the land bank's business will grow very rapidly.

Food Fit for Gods Wasted

THE present centering of attention by economists on food waste is showing that one of the most unnecessary losses of a valuable food product is the ungathered nectar of flowers and plants.

Speaking in a broad way, there are few farms in America that do not annually produce several hundredweight of honey in the flowers of the clovers, cereals, fruits, flowers, trees, and weeds over and above the honey required to sustain the bee harvesters of this appetizing staple food product.

The farms on which the owners systematically plan to save their honey at present are less than one in a hundred. On several million American farms where this honey goes unharvested year after year this wastage aggregates billions of dollars' worth of food of the very choicest kind.

A Minnesota scientific bee culturist, Francis Jager, is authority for the statement that 100 colonies of honey bees suitably located and properly cared for can be expected to average a net production of profit twice as great as that of the average 160-acre farm of his State can show, while the equipment and overhead is less. Of course, 100 colonies of bees cannot be pastured on an average-sized farm, but there are innumerable farms where a dozen hives of bees could gather $100 worth of honey annually.

"The Sealed Room"

IN OUR next short serial, "The Sealed Room," by Edwin Baird, the tale of a young Illinois cattleman who went to Chicago in search of adventure, and the thrilling events which befell him there, the readers of Farm and Fireside will have a story just right for August evenings—light enough for summer reading and brimful of breathless conjecture as to what will happen next. It will appear in four parts, the first installment to be printed in the next issue, August 4th.

When you have read it, write the editor of Farm and Fireside your opinion of it. We shall also be glad to know whether you like serial stories or short, one- or two-part stories best, and what you would like them to deal with.

A tense moment in "The Sealed Room"

Our Letter Box

No Slackers Here

DEAR EDITOR: I don't agree with what Lydia M. O'Neil says about military training. I think every young man ought to be prepared to fight for his country.

My father was a soldier, and I had three uncles in the Civil War. My husband's father was under age at the time of the Civil War, and ran away from home three times before he succeeded in enlisting. My husband was a soldier in the Spanish War. He was nineteen years old when the war broke out, and wrote to his father for his consent to enlistment. When the reply came my husband was working in the field with a team. He threw the lines to the ground and ran all the way to town to enlist.

A few days ago my two sons, aged eight and nine years, came home from school with a new reader. One of them wanted to show me the two best pictures, and he turned the pages over, exclaiming, "Here is the best one!" It was the Stars and Stripes in all their glory. He then found the other, and to my surprise it was the old eagle screaming right at us from the page. You see they are little soldiers to the backbone, and I am glad of it.

MRS. E. L. MORAN, Vermont.

Doing His Bit

DEAR EDITOR: We haven't been saying much about feeding ourselves and our allies, but we have been doing what we could to help. The spring was so wet and cold that it was hard to get crops started off just right, but they are coming along nicely now.

We have 15 acres of corn, 4 acres in Early White Dent and the remainder in standard varieties. We have cut 14 acres of red clover, not extra good, but mighty nice in this time of scarce feed. We have 7 acres of cotton, and 24 acres of wheat which will give a fair yield. About 8 or 10 bushels an acre is a good yield here in the hills.

Our strawberry crop was fine, and we canned 60 quarts for home use, and sold some at 40 cents a gallon here in the field. We have several varieties of beans, both field and table peas, sweet corn, tomatoes, cabbage, and potatoes in abundance. Our Sudan grass is up to a fine stand, as is also the sorghum, both for hay and table use. We have our own cane mill and pan, and will make up our own molasses.

W. O. MCCORD, Arkansas.

Eradicating Poison Ivy

DEAR EDITOR: I want to say a word to FARM AND FIRESIDE readers who live in dread of poison ivy every time they start for an outing of any kind. Some people are particularly susceptible, and can escape only by avoiding the plant.

The cause of the irritation is a non-volatile oil found in the leaves and branches. This oil does not act immediately, and most of the inflammation can be avoided by its prompt removal. Alcohol is a solvent of the oil, and repeated washings of the affected area will remove most of the irritant. A saturated solution of sugar of lead in alcohol is also satisfactory. In addition to being a solvent it affords relief from inflammation. This solution should not be used on large areas of the body because of the danger of lead-poisoning.

Inflamed areas should be covered with absorbent cotton or lint kept moist with a saturated solution of either bicarbonate of soda or lime water. This treatment will relieve inflammation, but more serious infection should be treated by a physician.

In small woodlots and picnic grounds poison ivy can be readily destroyed. The stumps, and as many of the roots as possible, should be removed by grubbing. Because of underground root stalks, which spread in all directions, the eradication cannot be completed with one grubbing. As soon as shoots appear the remaining root stalks should be dug. Eradication work must continue until shoots no longer appear.

CHARLES RAPP, Oklahoma.

Shaving and Saving

DEAR EDITOR: I just must write and tell you that I think you are putting out about the best, most practical paper, not only for the farmer, but for every person in all walks of life, to read, that can be gotten up.

What struck me in one of your editorials was what you said about saving money shaving one's self. Next month it will be twenty-nine years since I was shaved by a barber. Just count that up—three times a week at ten cents a shave. I have never computed what I have saved, but if you will figure it up with compound interest I believe it will run well on to a thousand dollars.

But I did not cut out the barber on account of the cash saving as much as to save time. Often on a Saturday night I had to wait an hour or two to be shaved, and in shaving myself I do it in spare moments. However, if I only saved one hour each week, in each year I saved one week's working time, and in twenty-nine years I have saved more than half a year's time. You see the value of the time saved is greater than the cash saved.

I used the old-fashioned razor until my brother insisted that I try his safety. To please him I did, and have not shaved with the old razor since.

The thing I find to do a good job in shaving is the lathering. I appreciate it, for I had trouble shaving until a few years ago I learned how to lather. Use warm or rather hot water, work your lather up well in the mug, lather your face well, then work it in with your fingers. Then wash face thoroughly with warm water. Lather again and shave, dipping the razor frequently in warm water.

There is so much of practical value to any person in each issue that to praise FARM AND FIRESIDE is like praising the Bible. E. P. CUTHBERT, Pennsylvania.

A Home-Made Dryer

DEAR EDITOR: As I have often tried the old way of drying corn with poor results, I decided to try a better method. I got a new pine box 3x2 feet, took the boards off the sides, and replaced them with new screen. I fitted the box with good handles on the ends, so that it could easily be lifted, and hinged one end to make a tight-fitting door. This dryer can be set anywhere in the sun, and I do not have to worry about either flies or chickens.

MRS. PERCY SIERLE, Kansas.

EW

Automobiles

Light from Old Cells

By R. W. Taylor

HERE is an easily made battery light for a garage which is very convenient, especially where there are small children. It will do away with the danger of matches or candles. Materials needed are as follows: 1 board 3 inches wide and 2 feet long, 1 minature lamp socket, 1 single point battery switch, 1 three-volt bulb, 10 feet No. 18 insulated wore, 2 dry batteries.

Fasten screw eye in top of board to hang up by. Mount socket near top end of board and drill two holes near the terminals for wires to pass through. At lower end of board mount the switch.

Batteries may be set on the floor or on a shelf. Dry cells which are too weak to spark an engine will operate the lamp for several months.

Throttling Down on "High"

By J. D. McIntire

"MY CAR will not throttle down on high gear without jerking," writes a man who has had his machine but a short time. "It runs very nicely at about 20 miles an hour, and better at a 25-mile speed. But I can't make it run smoothly at much less than 15 miles an hour on high gear." He says it is a four-cylinder car and wants to know whether a new carburetor would be of help.

This is a matter involving the general condition of the car, condition of road, and skill of the driver. First of all, the spark plugs need attention, since the jerky running of a car may be caused by one or more dirty plugs, causing uneven firing at low speeds. The gaps of the spark plugs should also be at equal distances so all cylinders will fire evenly.

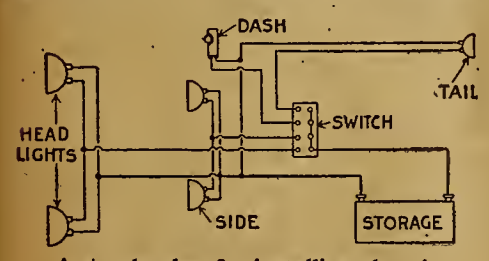
The removal of carbon from the cylinders and grinding of the valves is likewise important. A fairly rich mixture of gasoline and air usually permits of lower throttling than a lean mixture. This is a matter of carburetor adjustment. Finally, the driver must remember that when the engine is turning over slowly the spark should be advanced much less than when running at a high speed. There are carburetors on the market which are designed to permit of low speeds on high gear, and the use of such a carburetor will help when all other conditions are favorable, but the carburetor alone will not solve the problem.

A four-cylinder car in good condition will throttle down to from three to seven miles on high gear, depending on the construction of the car. Six and eight cylinder cars will throttle down to as low as two miles an hour, or even less, on smooth pavements and for short distances.

New Eyes for Old Cars

By W. V. Relma

A GREAT many people who have old cars which are equipped with gas lights would like to have them wired for



A simple plan for installing electric lights in an old car

electric lights. This can be done at a small cost if the owner does the work.

Of course, the most satisfactory installation is one which includes a generator for producing the current for charging the storage battery with an automatic cut-out, which will prevent the battery from being overcharged. The cost of such an installation is, in most cases, prohibitive. There are such outfits sold, however, complete for $30 and upwards. The main trouble in this sort of a job is the location and adjustment of the generator to the motor parts.

If you are willing to dispense with the generator and thus reduce the cost of the installation, the problem is relatively simple and easily handled. The storage-battery box should be of the proper size to receive the battery snugly, and should be located at some convenient place, as on the running board, because the batteries will have to be removed from time to time for recharging. Possibly this will be every week or every two weeks, depending upon the amount the system is used. The charge for doing this is very small. Two batteries are better than one, as one could be charging while the other is in service. The sketch shows a wiring diagram which gives a general idea of the plan for wiring an old car. Be careful to prevent short circuits and loose connections. The wires should be fastened to the car with small staples made for that purpose.

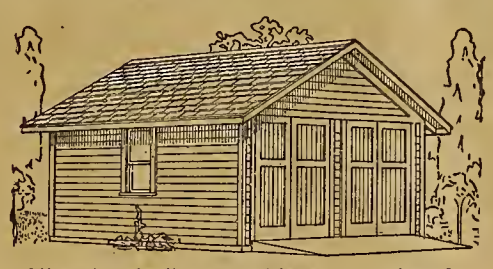
Use adhesive tape wherever there will be a tendency for the wires to chafe. Extra bulbs should be provided so that replacements may be made at once. These should be carried in a box that will not allow the bulbs to rattle and be broken. Such boxes can be obtained from supply houses which furnish the bulbs.

Car and Truck Garage

By Robert L. Winters

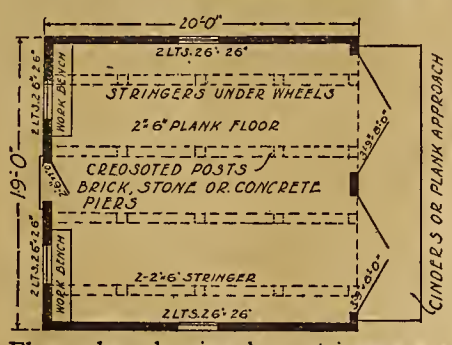
A GARAGE that is suitable for housing both an automobile and a motor is shown in the sketches. Or it may be used for a car and a trailer. The studding and rafters are two-by-sixes placed two feet apart, and the floor is of two-inch planks laid over stringers. These are supported by creosoted posts or piers of concrete or stone.

The garage is eight feet high at the eaves, and is sided with drop siding. If the building is to be warmed in winter



The simple lines enable anyone handy with tools to construct this garage

sheath the inside. The roof boards are 1x6 material spaced two inches apart if shingles are to be used, but made solid if you desire to use prepared roofing.



Floor plan showing how stringers are placed where most weight will come

The doors are constructed as illustrated, the paneled effect being secured by using matched flooring. Doors of this size require three large hinges for each half-door. The outside of the garage may be painted to match the other buildings, but paint the inside white or a light gray, so as to make it as bright as possible.

PNEUMATIC tires are now made as large as 42x9 inches. Such tires are used chiefly on motor trucks used for moving furniture, glass, produce, and other commodities likely to be damaged by jolting.

Old Casing for Shoe Soles

By Ernest Triplet

OLD automobile casings make a good substitute for sole leather. Select one which has a fairly good tread but which has been worn out from rim-cutting or blow-outs. Cut out a piece of the tread longways—not crossways—of the tire and tear out about two layers of the fabric. Trim the part that is to be across the instep as for leather and tack on in the same way as a leather sole. If you wet your knife blade with water, you can trim the edge much easier.

Do not apply burnishing ink or use iron on a sole of this kind. I have been doing shoe-repairing as a business and have been using auto-casing soles on some shoes. They will outwear the average leather sole found on the market to-day.

This genuine Victrola for $15 will play any music in the Victor Record catalog.

Write to us for the handsome illustrated Victor catalogs, and the name and address of nearest Victor dealer.

Victor Talking Machine Co.
Camden, N. J.

Victrola IV, $15

Other styles up to $400

HEALTHY WHEAT SMUTTED WHEAT

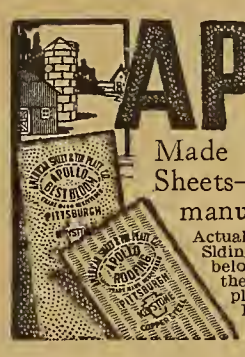
Grain Smuts

The U. S. Dept. of Agriculture recommends the use of Formaldehyde for cleansing seed grain before planting. It guards against the development of stinking smut and loose smut in wheat—

FORMALDEHYDE
The Farmer's Friend

The loss through smut in this country amounts to millions annually. This can be prevented by treating all seeds before planting with Formaldehyde solution. Pint bottles at your dealers, 35 cents, treats 40 bushels. Complete directions for using Formaldehyde, U. S. Dept. of Agriculture reports and hundreds of valuable suggestions in our big illustrated booklet sent free.

PERTH AMBOY CHEMICAL WORKS
100 William Street New York



APOLLO ROOFING

Made from APOLLO-KEYSTONE COPPER STEEL Galvanized Sheets—the most durable, rust-resistant, galvanized sheets manufactured for all forms of exposed sheet metal work.

Actual weather tests have proved conclusively the superiority of this material for Roofing, Siding, Culverts, Tanks, Silos, Cisterns, and similar uses. Look for the Keystone added below regular Apollo brand—it indicates that Keystone Copper Steel is used. Demand the genuine—accept no substitute. Our free booklet "Better Buildings" contains farm plans, information and instructions for the application of metal roofing and siding. It is of special interest to every farmer and owner of buildings. Write for free copy.

AMERICAN SHEET AND TIN PLATE COMPANY, Frick Building, Pittsburgh, Pa.

Save 90¢ of every $1.00 Punctures cost you

DON'T PAY 25 to 50 CENTS more than you need to for puncture repairs. Don't put up with make-shift repairs that cost you twice as much in the long run. Punctures are sure to come. Get ready *now* to fix that next one right—to put on a patch the *quickest, surest, cheapest way* you can ever find—with

MARVEL JR. VULCANIZER OUTFIT COMPLETE $1

MORE THAN 500,000 NOW IN USE

REPAIR THREE PUNCTURES AT OUR EXPENSE

Buy *Marvel Jr.* today. *Use it for three repairs.* If it isn't absolutely satisfactory—If you aren't fully convinced it is worth ten times more than your money—send it back. We'll return your $1.00 gladly—no argument—no delay.

Remember—material for six complete puncture repairs comes with the *Marvel Jr.* Everything furnished ready to use. Enough material furnished to *more than pay for the entire outfit!* And our money-back guarantee on every bit of it.

Don't wait longer—don't spend a single cent more of money *Marvel Jr.* will save you on repairs. Buy from your dealer or pin a dollar bill to the coupon and send it in *now.*

Double Your Tire Mileage with Marvel Sr. Vulcanizer

Save $1.00 to $2.00 on every casing repair. Fix tread cuts, sand blisters, etc., without taking tire off wheel. Repair tube blow-outs better than new. Material furnished for *large number* of repairs. Outfit complete only $2.00.

THE MARVEL ACCESSORIES MFG. CO.
7277 St. Clair Avenue, Cleveland, Ohio

MAIL THIS COUPON NOW!!

THE MARVEL ACCESSORIES MFG. CO.
7277 St. Clair Ave., Cleveland, O.

According to your money-back guarantee send me one Marvel Jr. Vulcanizer outfit all charges prepaid. I enclose $1.00 herewith. ($2.00 for Marvel Sr. Vulcanizer outfit.

Name
Address
State
Dealer's Name

Necessity of Refined, Sterile Hog Cholera Serum

The necessity of sterility in hog cholera serum is shown by the fact that the word "sterile", when applied to a serum, means just one thing—*absolute freedom from all living germs.*

Unless the serum is guaranteed to be sterile, you may be assured that it contains germs, and these germs will multiply as the product ages.

Serious abscesses may be produced, or even blood poisoning result from the injection of contaminated serum. Why take chances with your hogs?

Sterile (germ-free) serum, cannot decompose. It is absolutely free from all noxious substances and cannot produce abscesses or in any way injure your hogs when properly administered.

Too much emphasis cannot be laid upon safeguarding hog cholera serum against foot-and-mouth disease. There is only one method known at the present time that can be depended upon as an absolute safeguard. I refer to the heating of serum to 60° C. for 30 minutes, as recommended by the U. S. Bureau of Animal Industry. The man who uses any hog cholera serum that has not been heated by this Government-recommended process, takes a needless risk.

Unless the serum is refined it contains solid matter which has no protective value but causes the serum to be absorbed very slowly.

Properly refined serum is absolutely free from all solid matter. When injected it is promptly and completely absorbed, thus insuring immediate and full protective value from the dose injected.

Irregular and uncertain results must be expected from the ordinary, contaminated, unrefined serums.

Uniform, dependable results may be expected only through the use of refined, sterile, heated serum, with its prompt and complete absorption, its absolute freedom from all germs and disease, and its guaranteed potency.

H. K. Wright, D.V.S.

Mulford
Refined
Hog Cholera Serum
The only 100% Potent, Sterile (germ-free), Clear, Heated Hog Cholera Serum
Send for free booklet No. 28
H. K. MULFORD COMPANY
Philadelphia, U. S. A.

SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN - Keeping IN OIL
SPLASH OILING SYSTEM
Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear
OIL SUPPLY REPLENISHED ONLY ONCE A YEAR
DOUBLE GEARS — Each Carrying Half the Load
Every feature desirable in a windmill in the AUTO-OILED AERMOTOR
Gasoline Engines — Pumps — Tanks
Water Supply Goods — Steel Frame Saws
WRITE AERMOTOR CO. 2500 12TH ST., CHICAGO

ABSORBINE
TRADE MARK REG. U. S. PAT. OFF.
Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is a
SAFE ANTISEPTIC AND GERMICIDE
Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.00 a bottle, delivered. Describe your case for special instructions and Book 5 M free.
W. F. YOUNG, P. D. F., 284 Temple St., Springfield, Mass.

Where Is He Lame?
Can he be cured? Our FREE Book will tell you 99 times out of a hundred and we are here to help you if you are not sure.
SAVE-The-HORSE
is sold with a Signed-Contract-Bond to return money if remedy fails on SPAVIN,—Ringbone—Thoropin or ANY Shoulder, Knee, Ankle, Hoof or Tendon Disease. You should have both book and remedy on hand for an emergency. It's cheap horse insurance. Send for your copy of BOOK, Advice and sample of Guarantee-Bond today. All FREE.
TROY CHEMICAL CO., 60 Commerce Ave., Binghamton, N. Y.
Druggists everywhere sell Save-The-Horse with CONTRACT or we send by Parcel Post or Express Paid

Live Stock

Cheap or Highly Bred Cattle

By J. A. Rickart

I ASKED a commission buyer at the stockyards which were most profitable to the finisher, cheap cattle or well-bred ones, and he said:

"It depends on how a man is situated. As a rule, I advocate handling medium to cheap grades of cattle. Every drove of low-bred cattle contains some individuals that have considerable outcome. For example, two little steers may look just alike to the average buyer, but the man who knows picks out the one with some stretch to him, good hair, straight legs, does not wobble when he walks, and cuts back the one with the tight hide, crooked legs, short dead hair, and other signs of in-breeding. Both animals may be light-boned, and even the good one will lack the developing ability of a high-bred animal.

"There is another reason," he went on. "For two or three years packers have needed about all the beef they could buy. They do not pay as big a premium for breeding in the finished animal as they used to do, if flesh is equal. I have seen two droves of cattle sell only 50 cents a hundred apart, whose original cost as stock cattle was $1.25 apart."

"But how do your customers figure who believe high-bred cattle make a greater profit?"

"Any cattleman will have to admit that the lightest eaters are the highly bred cattle, and they make the biggest gains, especially calves and yearlings. But for the moment forget that handicap, and the line of figuring is something like this:

"If I buy stock steers at nine cents a pound and my neighbor buys stock steers at eight cents a pound, and we feed them alike, and there is the same difference in price when we come to sell, and assuming that each drove has gained the same amount in weight, I am ahead of him one cent a pound on all the weight the steers have gained. Suppose he sells his cattle at 10 cents a pound and I get 11 cents for mine, he has sold the gain in the weight of his steers for 10 cents a pound, while I get 11 cents a pound for the gain in weight on my steers. We each gain two cents a pound on the original weight of our cattle. But my better bred steers will gain more weight on the same amount of feed, or will gain as much weight as his steers on less feed, and even if I get only half a cent a pound more than my neighbor when we come to sell, I am still ahead of him."

Solving Work-Horse Problem

COMMUNITY breeding with a community ideal is the solution of the work-horse problem. Community breeding of work horses is the only remedy for the condition existing in the horse market. The average horse is valued at $101.60, and the cost of production for a three-year-old horse is $104.06. Good work horses bring higher prices than ever before, the best types selling for $250 to $350 a head in the open market. It certainly behooves us to give more attention to the kind of horses we raise.

One person can do little toward improving the horses in a community. The community ideal is an absolute necessity, and when correct no other side line on the average farm returns as great profits when the proper methods of production are followed. The demand for high-class work horses was never greater than to-day, yet many horse buyers will say they do not care to handle heavy horses. This is because there are so few really high-class heavy work horses that it is difficult to collect a carload.

If everyone in a community or a township were interested in the production of the same type of high-class horses the problem of production would become much easier. This condition would result in a more general demand for better sires.

The Feed for Lambs

LAMBS make cheaper gains when fed corn or kafir with silage and alfalfa than on corn and alfalfa alone. Three rations are desirable for feeding lambs: First, corn, alfalfa, silage, and cottonseed meal; second, kafir, alfalfa, silage, and cottonseed meal; and third, corn or kafir, alfalfa, and cottonseed meal.

Lambs fed corn, alfalfa, and cottonseed meal will make slightly greater but not quite so cheap gains as those fed kafir, silage, alfalfa, and cottonseed meal.

Whole grain should be fed to lambs because it will not gum as readily as ground grain. A tenth of a pound a day is plenty to feed at first, but this should be increased gradually. Within two or three weeks, when the lambs are on full feed, two or three pounds of grain should be fed.

It isn't wise to crowd or push the lambs, because if they once get off feed they lose rapidly in flesh. Always feed plenty of alfalfa or some other kind of hay along with silage. A quarter of a pound of cottonseed meal a day is enough. Cheap feed, such as damaged hay, can be fed to lambs with good results. From sixty to eighty days is the common length of the feeding period.

The most desirable weight for finished lambs is between 80 and 85 pounds. A quarter of a pound gain a day is a creditable showing for lambs on full feed. Feeder lambs should weigh between 50 and 55 pounds. They should have a strong frame, be rugged, show lots of constitution, and be uniform in size and conformation. They should have size and substance enough to carry plenty of flesh and fat. Lambs of this kind can be bought through any trustworthy commission firm.

Most sheep feeders drain their feeding pens so they will remain dry. Nothing is more detrimental to the health and thrift of lambs than wet quarters.

Feed Forage Crops for Profit

PIGS fed on good forage crops will make many times as much profit as those fed in dry lots.

The accredited gain in pork to an acre of forage varies, depending upon the crop, the age of the hog, and amount of grain fed. An acre of sweet clover, with corn at $1.50 and hogs at $15 a hundred, netted $42.07; rape, $37.50; alfalfa, $65.90; and a combination of oats, peas, and rape, $64.60.

Of all forage crops, alfalfa is the great permanent crop, while rape is the emergency crop, and green rye the fall and early spring crop. The ideal forage crop should show adaptability to soil and climate, permanency, palatability, reasonable cost of planting, and good pasture at any time during the growing season. Alfalfa, clover, and rape have most of these qualities.

If the same type of high-class horse were raised by everyone in a township, buyers would be attracted there in numbers and better prices would result

How I Was Swindled

By OUR READERS

Visiting Nurse Collects $10

MY HUSBAND and I were both ailing, but were not under the doctor's care. I was feeling miserable one morning when, on answering a knock at the door, I was surprised to see a nice-appearing, neatly dressed woman who asked to come in, as she wanted to talk to us. She commenced something like this:

"Now, I am a trained nurse, and in order to eliminate patent medicines from the farm home I am taking this way of doing it." Then she looked at me and said in a cooing voice: "Oh, dear, though you are large and fleshy, you are not well, you need a rest"—and a tonic, and several other things too numerous to mention.

I told her, yes, I wasn't feeling well, but I guessed I could grin and bear it, as we all have to do. She said:

"Now, I know your husband would be willing to pay any amount that you might be well."

After talking about five minutes she had persuaded us, by working on our sympathies, that it was going to put us all in fine health if we would do according to her prescriptions. The medicine was to come from a druggist in town, to be sent by mail C. O. D. After explaining all about the scheme, she folded her pious hands in her lap and said:

"Now, I won't say one word, either one way or the other, to influence you people, but will leave it to your own judgment."

But by that time we had no judgment left, so my husband wrote out a check for $10, her fee for the year we were to be under her charge. We have not seen nor heard anything of her since.

MINNESOTA.

Scheme to Cheat Widows

I HAD just buried my husband, and on my return from the cemetery was met by an expressman at the door, with a package addressed to the departed one. Of course I immediately took the package, not thinking for a moment that it could be a fraud. I paid the C. O. D. and express charges, $2.80 in all. Upon opening it, much to my chagrin, I found a ten-cent shaving cup. I at once went to the express office, and also reported it to the police department. The superintendent of police ordered the express company to hold the money, and stationed an officer at that place in order to get the persons who might call for the money. In due time two young men called, and upon arrest confessed their scheme.

The case was published in the local papers, and it came to light that the young men had worked many people besides myself in this manner, but I happened to be the one not ashamed to catch them, knowing well that my husband had not sent for a shaving cup, as he had a very beautiful one of his own. They struck the wrong article. If it had been something he had needed I should never have been any the wiser.

NEW YORK.

Victim of Carnival Wheel

SOME years ago a street carnival held sway for a week in our town. I went to the grounds each evening during the week, but had resolved not to spend a cent. I kept my resolve up to Saturday evening, when I drew two weeks' pay. Being a foreman carpenter, I naturally received good wages. With my pay and considerable money besides, I sallied forth to the carnival, having what is called a "flush" feeling, till I met up with a man having an innocent-looking board about 18 inches square.

It had a dozen 20-penny spikes driven in a circle around the edge of the board, with a nicely pivoted arm reaching within about two inches of the circle of spikes. In one end of this arm was a slim tapering piece of cardboard, about 2½ inches long, acting as a pointer when the machine was placed in motion.

There were no watches or jewelry on this board, as is usually the case, but only letters and characters representing the amount you were to be taken in for. I can only remember two of those, which were D. U., meaning "double up," and J. P., meaning jack pot.

I watched the game for a short while, and saw men whom I knew win amounts of from $2 up to $10. And right there was my undoing, because I did not know that these men were paid to do what I failed miserably in doing.

I started by handing in 50 cents. But, lo, when the machine stopped it was on D. U., meaning that I should part with $1 to stay in the game, which I did; and this time it landed on J. P., which was virtually the same as before. Right here it took me [CONTINUED ON PAGE 14

Dairying

Experience with Milk Fever

By J. W. Hart

SEVERAL years ago I had a cow with a three-day-old calf take sick with a disease I had never seen. I called several of my neighbors over the phone, but they could not tell me what to do for her. She was down and had a high fever. Her mouth was open, tongue sticking out, and slobber dripping from it. She was breathing hard and fast, and I could not get any milk from her teats.

As these symptoms seemed to correspond with the symptoms of milk fever which I had read about in FARM AND FIRESIDE, I decided to try inflating the udder. Having nothing with which to do this, I sent to a neighbor and borrowed a bicycle pump. With this I pumped into the bag all the air it would hold. After about three hours I milked all the air out and pumped the udder up again. This was about ten o'clock at night and the next morning she was perfectly well.

A little later a neighbor had a cow take sick the same way. He called me over to see her, and when I told him what to do for her he laughed at me. But I finally got him to get a pump. While we were inflating the udder, he said we were killing time, as the cow was going to die, but she woke him next morning before daylight bawling for her calf.

Separator Pays for Itself

By Charles E. Richardson

NOWADAYS it seems foolish to think of separating the milk and cream by the old-fashioned method of shallow-pan setting. By this I mean putting the milk in pans about four inches deep and letting stand until cold, then skimming the cream that collects on the top. While nice butter can sometimes be made from the cream obtained by such methods, considering the loss of time and butterfat, the modern cream separator soon pays for itself.

If one reckons the value of a cream separator at just its worth in saving time, which is surely five cents a day, that would amount in a year to $18.25. At that rate, in two or three years the separator will have earned its cost. And such figuring does not consider the saving in butterfat. So it can be seen that if one plans to make much butter a separator is a necessity.

After the milk is brought from the barn while still warm, it should be strained through a wire strainer and cheesecloth combined, to remove all of the lurking dirt that may have got into the milk. After separating all of the milk from that milking, the separator should be taken apart and thoroughly washed and cleaned, according to the directions furnished with the machine.

It is surprising how many persons merely pour some warm water through the separator and "take a chance."

I remember a conversation with one lady about the keeping and ripening of cream.

"Why, before I get a chance to even start to ripen my cream," she told me, "I find that it has 'turned' a good many times lately."

"How often do you plan to churn?" I asked her.

"Well, last winter I used to churn about twice a week, but now I must churn at least three times and sometimes four times a week," she told me. "I can't see why it acts so," she continued, "but it seems that every time that I get a certain amount of cream collected it sours before I am ready. So I have to churn before it gets too sour or rancid. Even then it does not have that clean sour taste it used to have."

I did some hard thinking, because as far as I knew she was very particular in her buttermaking. I wondered if it could be something wrong with the separator. We went to the machine and took it apart.

Well, it was coated with thick curds of rancid cream and sour milk that had been left there by careless cleaning. It was a wonder to me that the cream did not come out of the cream spout sour.

"Now this looks as though it had not been washed and cleaned as it should have been," I told her. "Don't you wash it at least once a day?"

"Now I can see what the trouble is," she exclaimed. "Mary, come here," she called, and the hired girl came in.

"Mary," she asked, "don't you wash this separator every day as I told you to?"

"Well, it's like this," and Mary hung her head. "I've been so busy lately that I could not wash it every day, so I thought that if I ran some warm water through it that it would go all right until I got a chance, but, honest, I never let it go over a week."

Mary was a new girl and never had worked where butter was made, so she did not realize the importance of a clean separator, but we had found the cause, and after that there was no more trouble.

I have known of others that seem to be careless in a way similar to that of Mary, though perhaps not quite so bad. But such methods, while saving work and time in one way, cause a heavy loss in others.

Power for Milker in Shop

By Calvin Frazer

"IS IT necessary for the engine or motor which operates a milking machine to be in the barn? I have a workshop about 90 feet away. Could I put the engine there and use it for other things?" This question, which comes from a dairyman with mechanical inclinations, is one that comes up for the first time.

While it cannot be definitely answered

The power that operates the machines may be in the barn or at a distance

for all makes of milking machines, there are several which would allow such a plan to be carried into effect. In fact, the distance between the power and cow stable may be as great as 300 feet. But in order that the cost of installation may be as low as possible, a more compact arrangement is advisable.

Four Pairs of Twins

By A. L. Peterson

IN a recent issue of FARM AND FIRESIDE I noticed a picture and record of a cow which had twins twice in a year. I believe I can beat that record. Following is the exceptional performance of a cow I own: She had one calf in 1912, twins in 1913, twins again in 1914, one calf in 1915, twins in 1916, and twins again this year.

In other words, this cow, which is now eight years old, has produced ten calves, eight of which have been twin calves. She averages about seven gallons of milk a day, and has never been dry except in the fall of 1916, when she was dried off for a rest. This cow is a half-blood Blue Guernsey and Shorthorn.

MORE than 40 per cent of the corn raised in Wisconsin is harvested for silage.

Overcoming Sticky Butter

By Richard E. Charles

EARLY last spring I was troubled considerably by having my butter too soft for working and printing. I had been unable to buy cottonseed meal, which I generally feed to my cows for the principal protein part of their rations, and instead had to use gluten. Cottonseed meal has a tendency to make the butter firmer, while I find that gluten is the cause of the butter bothering by being too soft.

When I washed the butter with the wash water about six degrees colder—as nearly all methods recommend—than the temperature of the buttermilk, the butter was so soft that even with slow turning of the churn it had a tendency to gather in large lumps. This of course would retain buttermilk and cause the butter to have white streaks in it when finished.

But through experimenting I found that having the wash water down as low as 50 degrees it hardened the butter so that I could work it and print it without any trouble. I have also discovered that when printing butter inclined to stick to the mold or print this trouble is overcome to a great extent by dipping the mold in cold water after each print.

Deposit in Separator

By W. B. Collins

"WE MILK a number of cows," writes a Kansas dairyman, "and since we have bought a separator I notice a cheesy-looking substance in the bowl. I can see nothing in the milk, and everything is kept clean. There is no odor left in the cream or butter. I would like to find out what this could be."

The substance described is what is known as separator slime, and is a common occurrence, especially when large quantities of milk are separated. It consists mostly of little particles of casein and albumen, but may also contain dust, hair, and bits of cuticle that fall from the cow's udder during milking.

The great centrifugal force of a separator causes this material to be deposited in the bowl. While separator slime usually consists of inert and harmless material, it quickly becomes sour, and is the principal reason for cleaning and scalding the parts promptly after each separation.

Practice Judging Dairy Cattle

By Thomas Keene

SUCCESSFUL dairymen are nearly always good judges of dairy stock. Training in judging cattle enables one, first, to make few mistakes in buying stock; second, to get better prices for animals he has to sell; and, third, to breed more skillfully, thus building up a profitable herd in the shortest possible time.

Judging receives such prominence at shows and fairs that the casual observer sometimes carries away the idea that it is a field for experts rather than for the practical farmer. This is an incorrect conclusion. Practically everyone who handles dairy cattle is benefited by studying the art of judging cattle.

While actual performance is of course the most convincing evidence of the worth of an animal, the external indications of quality which are apparent to the judge of even moderate experience will go a long way toward preventing mistakes. Such indications are frequently the only means of estimating the worth of calves, bulls, dry cows, and all stock in which accurate milk records and pedigrees are lacking.

The quality of these cows is obvious, but only a good judge of cattle is able to place accurate values on each one

You Can Control HOG CHOLERA

HEALTHY hogs are less liable to get cholera than hogs whose vitality is doubtful. The Government recommends the use of a hog tonic to keep your herd in trim. Feed Blue Bag Hog Tonic as a preventive *before* they get worms or cholera. Then you can keep disease out of your herd; you can prevent and control it.

No matter how healthy your hogs seem to be, *take no chances*. Blue Bag Hog Tonic will help them pile up weight. Raising hogs for market is a safe and profitable business *only* when you can control cholera and other diseases in your herd.

BLUE BAG Hog Tonic is one of three hog remedies we offer.

Blue Bag Hog Regulator contains all of the ingredients of Blue Bag Hog Tonic with the addition of worm expelling ingredients. We recommend Blue Bag Hog Regulator when you have proved to yourself that your hogs are starting to have worms.

If your herd is real wormy and the hogs are becoming thin, **wait no longer**, but take them off feed and water and give them Blue Bag Worm Expeller.

You should have a sack of each of these hog remedies in your barns at all times.

For further information write for our Hog Regulator Book No. 7281F. It's free. Your copy is waiting for you.

Sears Roebuck and Co. CHICAGO

Money-making farms
15 states, $10 an acre up; stock, tools and crops often included to settle quickly. Write for Big Illustrated Catalogue. STROUT FARM AGENCY, Dept. 2699, New York.

SICK BEASTS
BOOK on treatment of Horses, Cows, Sheep, Dogs and other animals, sent free. Humphreys' Homeopathic Veterinary Medicines, 156 William St., N. Y.

Guaranteed Genuine Everlasting Grimm Alfalfa
Does not winter kill. Outyields other varieties, in hay and seed. I recommend summer planting. Booklet "How I Discovered the Grimm Alfalfa" and sample free.
A. B. LYMAN, Grimm Alfalfa Introducer
Alfalfadale Farm Excelsior, Minn.

"Capewell" Nails—Lasting Service
Service is what is wanted in horse-shoeing. Therefore, expert shoers and careful horse owners select Capewell nails.
THIS CHECKED HEAD OUR TRADE MARK
These nails stand the roughest service—resist all kinds of strains and knocks—save needless injury to hoofs.
The world's best at a fair price—quality considered, the cheapest. Ask for them.

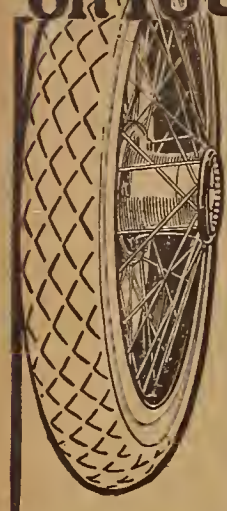
MINERAL HEAVE COMPOUND In use over 50 years
CURES HEAVES
Booklet Free
$3 Package guaranteed to give satisfaction or money back. $1 Package sufficient for ordinary cases.
MINERAL HEAVE REMEDY CO., 425 Fourth Ave., Pittsburgh, Pa.

Only $2 Down
One Year to Pay!
$29 Buys the New Butterfly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.
30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.
ALBAUGH-DOVER CO. (12)
2139 Marshall Blvd. CHICAGO
100,000 now in use

E. H. WITTE

BUY A WITTE High-Grade Engine
I can ship immediately—any size or style—WITTE Kerosene or Gasoline Engine—2 to 22 H-P., Stationary, Portable or Saw-rig—all ready to run on arrival. Why wait 6 to 8 weeks, or longer, when I can ship you a better engine Now! Today!!—so that it will be earning a part of its cost. Cash or Easy Payments. Immediate shipment proves superior factory service. My Free Book, "How To Judge Engines," tells why I save you $25 to $100, and sell you a better engine. Yours for a post card. ED. H. WITTE,
WITTE ENGINE WORKS,
2066 Oakland Av., Kansas City, Mo.
2066 Empire Bldg., Pittsburgh, Pa.

SAVE 40% on Your Tires



3500 Mile Guarantee

Manufacturers of high-grade Tires sell us their surplus stock or over-production for spot cash. These Tires, actually firsts, are sold as blemished, at a REDUCTION OF 40%.

Size	Plain	N-Skid	Guaranteed Tubes
28x3	$7.60	$8.25	$2.35
30x3	7.70	8.60	2.20
32x3	9.25	9.95	2.40
30x3½	9.95	11.10	2.60
31x3½	10.55	11.60	2.75
32x3½	11.50	12.95	2.90
34x3½	12.15	13.35	3.05
31x4	14.75	16.60	3.50
32x4	15.05	16.85	3.60
33x4	15.75	17.20	3.65
34x4	16.10	17.55	3.75
35x4	17.00	18.60	3.85
36x4	17.20	18.65	3.95
34x4½	21.65	23.65	4.55
35x4½	22.70	24.70	4.65
36x4½	23.05	25.15	4.75
37x4½	23.95	26.10	4.95
35x5	24.90	27.25	5.40
36x5	27.10	29.60	5.65
37x5	26.40	28.85	5.80

Pay After Examination
2% Discount For Cash

We also save you money on all parts and accessories. Tell us what you want.

We ship C. O. D., subject to inspection. When ordering state if Clincher, Q. D. or S. S. are desired.

ORDER TODAY—prices may jump. Full information on request. Address

Philadelphia Motor Tire Co.
246 N. Broad Street PHILADELPHIA, PA.

RAISE BELGIAN HARES FOR US. Flemish Giants and New Zealands. Profits large. We supply stock and pay $3.00 each. Also Cavies, Squab Breeders and fur bearing animals. Instruction book and contract for dime. None free. Outdoor Enterprise Co., 73 Main St., Holmes Park, Mo.

KEROSENE ENGINES OTTAWA LATEST DESIGN

Durable, Powerful, Reliable, Massive. Built to last; to do hard, heavy work. Uses Cheapest Fuel. Pulls 25 to 50 per cent over rated H-P. **3 Months' Trial. Easy Terms.** Sizes 1½ to 22 H-P. Easy to Start. No cranking. No batteries. **10-Year Guarantee.** Most practical engine ever built. Engine book free. A Postal brings it. Write today.

THE OTTAWA MANUFACTURING CO.
151 King Street Ottawa, Kansas

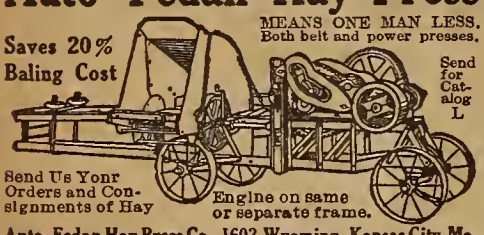
Eli HAY PRESS

40 styles and sizes for every purpose. Catalog free.
KING OF BALERS
COLLINS PLOW COMPANY
1110 W Hampshire St., Quincy, Ill.

Auto-Fedan Hay Press

Saves 20% Baling Cost

MEANS ONE MAN LESS. Both belt and power presses.

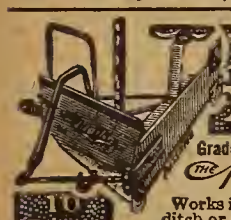


Send for Catalog L

Send Us Your Orders and Consignments of Hay

Engine on same or separate frame.

Auto-Fedan Hay Press Co., 1602 Wyoming, Kansas City, Mo.



Ditches Terraces

Grade roads, build dykes, levees with The Martin Farm Ditcher and Grader

Works in any soil. Makes V-shaped ditch or cleans ditches up to four feet deep. All steel. Reversible. Adjustable. Write for free book and our proposition.

10 Days Free Trial

Owensboro Ditcher & Grader Co., Inc. Box 207 Owensboro, Ky.

CORN HARVESTER Self Gathering for cutting Corn, Cane and Kaffir Corn. Cuts and throws in piles on harvester. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only $22 with fodder binder. The only self gathering corn harvester on the market that is giving universal satisfaction.—Dexter L. Woodward, Sandy Creek, N. Y., writes: "3 years ago I purchased your Corn Harvester. Would not take 4 times the price of the machine if I could not get another one." Clarence F. Huggins, Speermore, Okla.: "Works 5 times better than I expected. Saved $40 in labor this fall." Roy Apple, Farmersville, Ohio: "I have used a corn shocker, corn binder and 2 rowed machines, but your machine beats them all and takes less twine of any machine I have ever used." John F. Haag, Mayfield, Oklahoma: "Your harvester gave good satisfaction while using filling our Silo." K. F. Ruegnitz, Otis, Colo.: "Just received a letter from my father saying he received the corn binder and he is cutting corn and cane now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing picture of harvester at work and testimonials.

CORN HARVESTER MFG. CO. Salina, Kansas

Cut Down On Your Tire and Gasoline Bill

Unless you maintain the air in your tires at the right pressure, you are using up 50% more rubber and 25% more gas than is necessary.

Measure the air in your tires with

Schrader Universal Tire Pressure Gauge

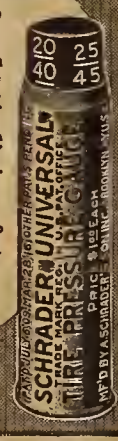
and reduce the cost of your motoring.

Price in U. S. A. One Dollar.

Ask your dealer to show you the SCHRADER UNIVERSAL PUMP CONNECTION also. It makes tire-pumping and tire-testing easy.

A. SCHRADER'S SON, Inc.
801 Atlantic Ave.,
Brooklyn, N. Y.

$1.00 in U.S.A.



Garden—Orchard

How Farm Trade-Marks Help

By J. T. Raymond

FARMERS everywhere have adopted farm names, but farm trade-marks are scarce. To the producer striving to establish a reputation, the distinctive trade-mark, considered so indispensable in manufacturing, has decided value. And it is inexpensive.

The trade-mark should carry a definite message. One New England woman has a pen-and-ink sketch of a dainty little girl carrying a basket overflowing with eggs. This trade-mark appears on her stationery, her business cards, and her shipping containers. She believes the trade-mark has definite value in her business, much of which is done by mail.

Another example is an apple farm going by the name "Applecrest," which has for a trade-mark a colored crest in which apples figure.

The farm trade-mark goes hand in hand with quality. The producer of a first-class article gives it a trade-mark, identifying it, and the demand grows fast.

Safeguarding Against Wind

By C. E. Davis

NOW that windstorms are far more fierce than when the country was more thickly wooded, there is much more reason to make sure of windbreaks around the home buildings for the comfort and safety of our families and stock. Trees set even a hundred yards from the buildings will not only do much to break the force of windstorms, but, by absorbing the free electricity in the air, will prevent lightning strokes. On or near many farms can be found fine young trees of sugar maple, chestnut, pine, etc. Or a few nuts like hickory, pecan, walnut, and the seed of shade trees planted in the right spot will soon grow into thrifty trees. The location of the trees should be planned with care, so that shade and protection from the worst storms will result.

For protecting my own home here in Maryland I have set spruce, white pine, and cedar. Near the henyard are set sugar maple and lilac, and on hot days we find the shade of these windbreaks the coolest place on the farm.

A CLOD is little better as a source of plant food than a rock. There are now pulverizers and special tools for compelling clods to pulverize and become productive soil. The newly plowed land should be harrowed before knocking off work for the day. One hour of tillage at the right time is worth three later.

A Half-Acre for Health

By Cora J. Sheppard

FROM the half-acre which comprises our "farm" and home grounds, we are putting to rout the high-cost-of-living hobgoblin with keen satisfaction. Our early and late potatoes last from the first June digging until the next June crop is ready. Early tomatoes started in March and later seedings in the open ground furnish abundance for fresh eating, and last year our shelves groaned with 100 cans at the close of the season, thus making possible delightful home tomato soup at will throughout the winter.

Beans of all kinds, including limas, fresh, canned, and for baking, were ours *ad libitum*. Likewise onions for every purpose. Nor must I forget sweet corn and popcorn. Melons for a first palate tickler, "cukes" for fresh use and pickling, squash and pumpkin for pie timber, cabbage, turnips, and carrots for boiled dinners, grapes, small fruits, apples, peaches, and pears for all purposes, and a dozen other kinds of garden "sass" all fill the summer meals and "mealers" and cans for winter consumption.

Our motto is, "No home is worthy of the name containing less than one-half acre."

CAREFUL pruning of flowering shrubs after the blossoming season increases the vigor of growth, and next year's flowers will be improved thereby. On most varieties of flowering shrubs, next year's flowers will be on the growth of wood made this year. By remembering this fact better flowering can be secured.

$5,000 from Strawberries

By Mrs. L. L. Ferguson

NO MATTER what important large farming operations may press for attention on the dairy farm of Frank Wood, a successful dairyman of Marinette County, Wisconsin, the small fruits and garden crops are never neglected, and there is a reason. Mr. Wood

Section of three-acre field that yielded $5,000 worth of strawberries in five years

has found that strawberries return him early and generous profit for money and labor expended.

One of his stand-by commercial varieties for profit is Senator Dunlap. For home table use and special customers, the everbearing varieties have also proved of advantage. The choice of strawberries as a money crop is based on the fact that practically everybody buys them throughout the strawberry season for consuming fresh, for canning, and the commercial canneries, when in reach, also furnish a profitable market.

Mr. Wood has harvested three acres of strawberries for the past five years which have returned him an income of over $1,000 each year during that period.

This result has been secured from the same field without resetting except what was accomplished by cultivation methods directed towards reproducing new plants and getting rid of the old ones. Under ordinary circumstances not over two or three crops should be attempted before the old plants are turned under and a rotation is made use of as an aid to controlling insects and strawberry diseases.

Exhibit from a half-acre New Jersey garden used as a scare-crow to frighten off high-cost-of-living bogy

Flying Navy to End the War

[CONTINUED FROM PAGE 3]

has been necessary to put one great organizing individual, General Goethals, in charge of the work.

The food problem of the United States and of the allied and neutral nations has also called for a radical new method of handling. To solve it, the Administration had two bills presented to Congress, the Food Production Bill and the Food Control Bill. As Secretary Houston said recently, they are emergency measures intended to place in the hands of the Administration powers and funds adequate to meet the extraordinary conditions brought about by the war. The Food Production Bill, which has passed both houses, is intended to extend the activities of the Department of Agriculture so as to stimulate production and help conserve the supply of foodstuffs. It authorizes a food survey, makes provision in cases of special need whereby the Government can furnish farmers seed on credit or other terms at cost, provides facilities for dealing with the farm-labor problem, and so on. The Food Control Bill is the one under which the President has announced that Herbert C. Hoover will be food administrator or, as opponents of the plan say, "food dictator."

Such a centering of power and authority in the hands of a single official as contemplated in this measure, enabling him to exercise the most sweeping control over the distribution, consumption, and export of foodstuffs, would never have been seriously discussed before the war. It is another striking illustration of the way in which the war is compelling an overhauling of the government machinery.

The Changes War Brings

For years we have all heard political orators decrying the fact that power was being centralized at Washington. But as a matter of fact the centralizing process which has gone on for years has been slight compared to that which has gone on since the war opened. Lord Northcliffe, the famous British editor, now in this country, said recently that democracies were not well fitted to conduct war efficiently. The monarchy can do it better, at least at the start, because the Government is so centered that it can drive things along with greater energy. The result is that when a country like the United States gets into war things have to be shaken up and powers lodged in one man or a few men such as would not be permitted in times of peace.

A railroad preference bill gives the Government power to say what shipments shall be moved by the railroads and what shall not be. This is a sweeping measure. It isn't a long step from such legislation to government ownership and operation; yet conservative folks who have often held up their hands in horror at the thought of government ownership or operation don't seem to get a bit excited.

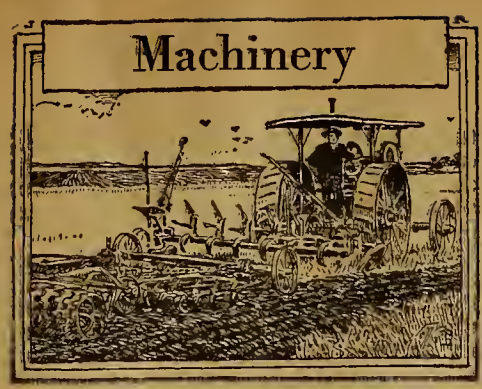
Quite as striking in the way of putting new and greater power in the hands of a few persons at Washington is the plan for having all purchases for this Government and purchases here for the Allies put in charge of a central board or central purchasing agency. This would mean expenditure of billions of dollars annually by such an agency.

Indeed, from the beginning of the war between this country and Germany the advisory commission of the Council of National Defense, composed of shrewd and astute business men, has had much to do with government purchases. Months before the United States got into war it adopted a policy of government insurance of cargoes. Now it is insuring the lives of seamen on merchant ships and writing accident insurance for them. Not only that, but it is proposed to provide government insurance for men in army and navy.

The long arm of the Government, in a word, is reaching out as never before. It is reaching out to make land war more effective, and reaching up into the air and down into the sea. In these parlous days of war, when the preservation of the nation's liberty is at stake, and the rights of the individual have to give way before the welfare of the public as a whole, we are beginning to learn there isn't much the Government can't do if it is essential to do it.

It can conscript the man and can conscript property. It can, and probably will, regulate wages and labor. It can stretch out its hand and take over the private factory or plant or mine and can order the whole resources of the people mobilized for purposes of public defense and protection. To what extent some of the marvelous changes which have been made necessary by entrance into the greatest war in history will outlast the war is a problem worth thinking of.

W



National Tractor Demonstration

By D. S. Burch

THIS year's tractor exhibit will be confined to one large demonstration instead of a series, as heretofore. The Demonstration Committee has selected Fremont, Nebraska, and the dates are August 6th to 10th inclusive. Persons interested in modern farm equipment will find this demonstration of extreme interest, especially as it offers an opportunity for comparing tractors and tractor-drawn implements at the same time and under similar conditions.

But if you are unable to attend and wish to keep in touch with developments, a new branch of our editorial service is called to your attention. The Machinery Editor of FARM AND FIRESIDE will attend the demonstration to note the progress in tractor designs since last year, and to study the merits of the different tractors as indicated by their performance and by the experience of farmer users.

Should you have any tractor questions or desire particulars concerning any machine in which you are interested, state your problem fully, mailing your letter so it will reach Springfield on or before August 4th. The matters on which you desire information will be investigated at the demonstration, and after its close you will receive by personal letter the information desired.

FARM AND FIRESIDE neither endorses nor favors for all conditions any particular make of tractor or machinery, but we believe that for certain kinds of work some tractors work to better advantage than others. We are therefore ready to help any reader find the one best suited to his needs. So if you cannot attend in person and wish to take advantage of this service, you are invited to do so. Address the Editorial Department, FARM AND FIRESIDE, Springfield, Ohio.

Harvesting with a Tractor

By Raymond Olney

WE HAD in the neighborhood of 300 acres of small grain, and as we were using a tractor successfully for other farm work, such as plowing, disking, harrowing, and seeding, we saw no reason why it could not be used equally as well to haul our two eight-foot binders.

Replacing the regular binder tongues with offset steering devices, we hauled the two binders tandem behind the tractor, and harvested our entire grain crop as easily in half the time it would have taken with horses.

It was indeed a pleasure to see this work being rushed along in the hottest kind of weather with no horses sweating, fighting flies, and becoming fagged in a few hours' time. We did not need to rest our iron horse every round or so; no day was too long for it to work, and it never tired.

The period during which the wheat is in the best condition to be harvested is comparatively short, and the farmer has to put forth every effort to get it cut during that time.

With the tractor we found that we did not have to begin harvesting quite as early as we did with horses. We waited until it had reached the right degree of maturity; then we started our outfit, and kept it moving fourteen to sixteen hours a day, or from dew to dew. In spite of hot weather the tractor chug-chugged along all day long, the only stops necessary being for meals and to oil the machinery occasionally, and make minor adjustments when needed.

By being careful to have the machinery in first-class working order before beginning the harvest, very few stops are necessary. Our tractor traveled at a speed of from 2½ to 2¾ miles an hour, which was considerably faster than horses, and that, together with only a few stops, enabled us to make rapid progress.

The hitch we used was a patented device designed for hauling binders tandem and in multiple. The principal feature of this hitch is an offset steering pole, so arranged that the offset in the pole is controlled by means of a tiller wheel located within easy reach of the man tending the binder. The more offset there is in the pole the wider swath the binder will cut.

Men on Binders Can Stop Tractors

The man on the binder can turn the offset out of the pole so that the binder will travel directly behind the one in front of it, or behind the engine. This is done in going to and from the field or through a gateway.

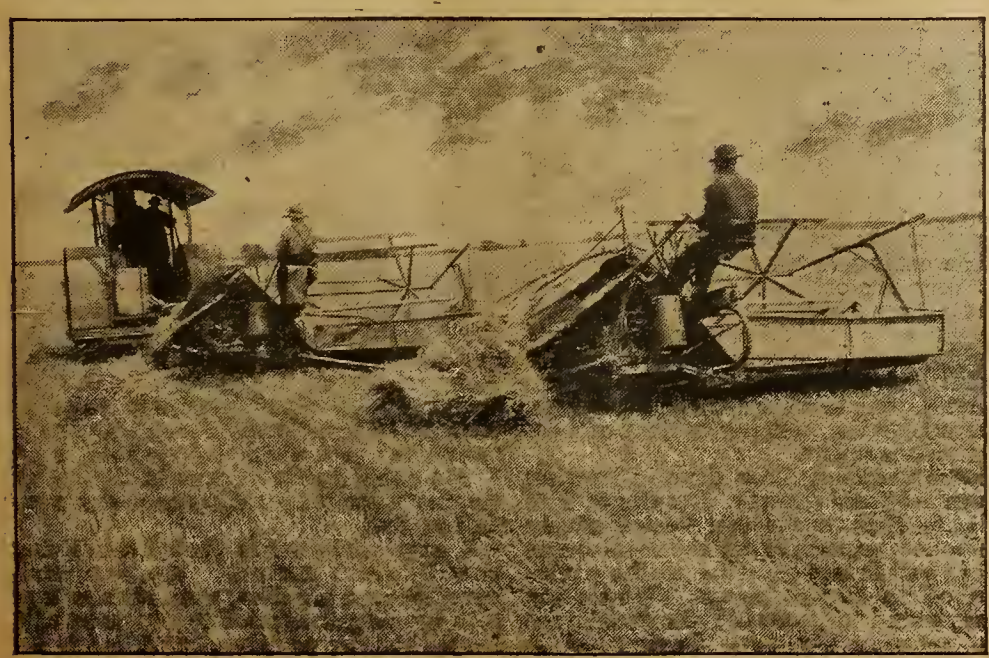
When this device is used, each binder works independently of the others, and any number of machines can be hauled. There is also another patented binder hitch that works on the principle of a cross-reach. This hitch does away with the necessity of a tiller wheel to be operated by the binder tender, but it is designed for pulling only one harvester behind the tractor.

One of the first things that we learned in the operation of our tractor harvesting outfit was the need of some means whereby the men on the binders could signal the engineer when anything went wrong with either of the machines. It was very essential that the engineer give his undivided attention to steering, for the better he guided the engine the less need there was for the binder operators to pay attention to steering their machines.

It was suggested that a bell be placed in the engine cab with a cord extending back to the last binder. But not having a bell suitable for this purpose, we hit upon an idea that proved much better. One end of the cord was tied to the clutch lever on the tractor. Then whenever there was trouble with the binders, it was simply a matter of pulling the cord which threw out the clutch immediately. This arrangement made it possible to stop the engine much more quickly than with any other signaling device, and relieved the tractor operator of a great deal of responsibility.

Most power farmers will have only one binder to use with their tractor, and since they have been in the habit of having only one man drive a team and binder, the majority are apt to think they are extravagant of labor if more than one is needed with a tractor outfit.

If it cannot be conveniently arranged so that only one man is required, it will be best to have two. Considering the fact that a tractor works so much faster than horses, and that it is capable of putting in fully twice as many hours in a day, no farmer should begrudge having two men to operate an outfit. In the matter of oiling and making adjustments two men are better than one, and aside from break-downs they should keep things moving better than one.



Either of the men on the binder is able to stop instantly the tractor by pulling a cord which fastened to the clutch lever

FREEMAN ENSILAGE CUTTER

The Cutter that Does Better Work

Freeman Ensilage Cutters cut clean and fast—and are absolutely safe to use. They are conceded to be the strongest, safest, most durable and efficient cutters in the world for making and handling ensilage. They reduce costs, save time, stop waste. They are built to stand up under years of use. They excel in convenience and ease of operation. They work rapidly and RIGHT! The Freeman Cutter has a heavy, substantial frame, large feed rolls, safety fly-wheel, perfect gearing and a Traveling Force-Feed Table. One lever starts, stops or reverses the feed rolls, and also controls the apron. Place the bundles on the feed table and THE MACHINE DOES THE REST! You can't beat the Freeman for efficiency, durability and economy.

With your Freeman Ensilage Cutter you will want a

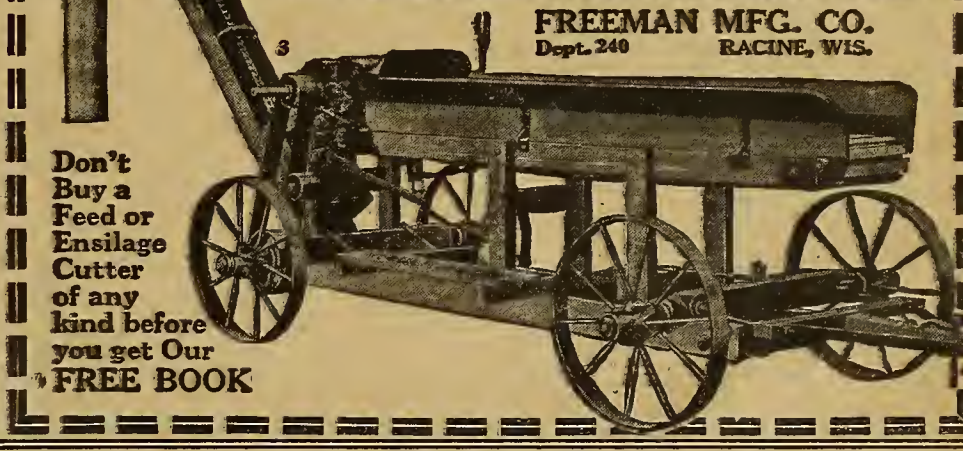
STEEL ENCLOSED CARRIER

—an elevating device that requires only ¼ to ⅓ of the power required for a blower to elevate same height. The cut feed passes up inside the enclosed carrier. Absolutely no choking, no clogging! Impossible for cut feed to blow away, or pile up at base of carrier. The carrier is furnished in any length. This wonderful outfit economizes on horsepower, is under perfect control at all times, has great capacity and does perfect work under all conditions. The machine, mounted on low-down trucks, makes the ideal outfit for the man who has several silos or who wishes to do job work. Our Cutters and Elevators have made a record for efficiency, durability and economy. Will positively save you money and give you perfect service.

Be Sure to Get Our Catalog

Don't think of placing your order for an ensilage cutter before you get the Freeman catalog. It will guide you right in your ensilage cutter purchase. Write today for the catalog and name of nearest dealer who handles the Freeman line. Get all the facts before you decide the ensilage cutter question—then you will decide on a Freeman.

FREEMAN MFG. CO.
Dept. 240 RACINE, WIS.



Don't Buy a Feed or Ensilage Cutter of any kind before you get Our FREE BOOK

COIN YOUR SPARE MOMENTS

You can make many dollars this summer and fall by acting as our agent in your home territory. We pay a liberal commission or a definite salary to persons of ability. Write and find out about it.

Address, Agents' Division
FARM AND FIRESIDE, Springfield, Ohio

Here's The Best Engine I Ever Made—My Patriotic Prices Save You Big Money!

Galloway Saves You On First and Last Cost with Best Engine Built

Don't be fooled on the engine question. Let Galloway post you on the secrets of engine making and selling. I'll tell you some engine facts in my book that will astound you. Learn the truth about engine claims and know all about heavy weight engines, light weight, four cycle engines. What horsepower, bore and stroke mean. Learn how to judge engines. Then see how dealing with me—Galloway the maker—you can save on your engine and get the type exactly suited to your needs. You cannot make a mistake after you read my free book.

It's My Masterpiece Engine

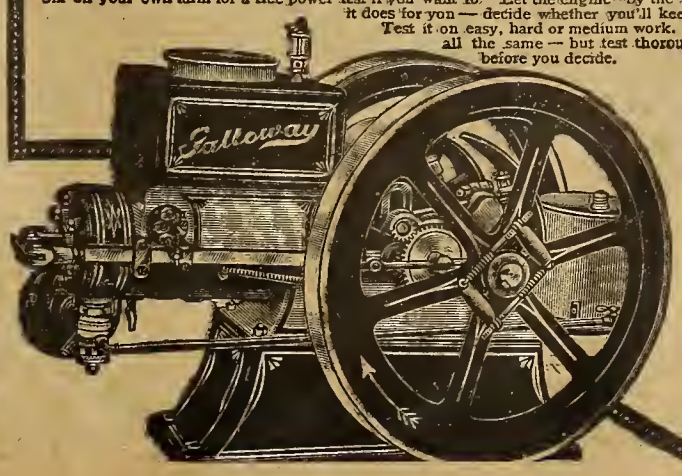
I call it that because that's exactly what it is. It has features (exclusive features), that make it the best engine ever made, bar none. Point for point—part for part—it excels every other engine I know—and I know them all. Test it—try it—any way for any kind of work—tough or easy jobs—and you'll agree with me that my masterpiece engine is a masterpiece in every sense. If you pay less than my price you skimp on quality. If you pay more, you pay too much.

I Guarantee the Biggest Engine Value in the World—Write and Ask Me to Prove It

Yes sir, the best engine—quality for quality—size for size—power for power—at the price. That's what I offer you in my Masterpiece Six. And I'll give you brand new, this-year engine improvements that are exclusively mine—cannot be had on any other engine but the Galloway. For instance, adjustable bearings, economy carburetor, valves-in-head, double ball governor, water-cooled cylinder head, automobile-ground valves.

Power Test On Your Own Farm

But you don't have to take my word, or anybody's word. You can try my Masterpiece Six on your own farm for a free power test if you want to. Let the engine—by the work it does for you—decide whether you'll keep it. Test it on easy, hard or medium work. It's all the same—but test thoroughly before you decide.



GET THIS FREE BOOK with Patriotic Prices

It tells everything you ought to know about engines. How to pick them out and why you should demand a heavy weight, large bore, long stroke and low speed. It also explains Galloway's direct-to-you plan of selling and why it means you get your engine at these patriotic prices at the time when the nation is calling for big crops. Write for the book today, sure!

CHOICE OF FIVE BUYING PLANS

It's easy to own a Galloway Masterpiece Six or any other size Galloway engine. My fair buying plans give you the terms you like and a power test on your farm. Send tonight for this book. Learn these engine facts, and facts on Separators, Spreaders, Tractors and other implements. A postal will do. We ship from St. Paul, Chicago, Council Bluffs, Kansas City or Waterloo factories.

Wm. Galloway, Pres.
Wm. Galloway Co.
395 Galloway Station
WATERLOO, IOWA

Engineering

and Mechanical Trade Courses. Standard four-year Electrical, Mechanical and Civil Engineering courses that may be completed in three years of forty-eight weeks each. Also one-year Machinist, Automobile Machinist and Mechanical Drafting courses. Twelve weeks' Traction Engine and Automobile courses. Fully equipped Machine and Traction shops, garage and laboratories. Skilled machinists and Auto machinists as teachers.

One of the very few schools where one can study to become a practical machinist.

Complete Radio and Manual Training courses. Students from all parts of United States. Enter any time. School year opens Sept. 11. Send for catalog and special information. Most courses also offered by correspondence. State course you are interested in.

Highland Park College of Engineering and Mechanical Trades
145 Euclid Ave. Des Moines, Iowa

FARM WANTED Want to hear from owner of good farm for sale. Give description and cash price. Write John H. Oaks, Dept. 421, Oshkosh, Wis.

BOOK ON PROGRESSIVE FARMING, Price $1.00
Twenty-five years' experience in scientific methods of farming. Specialty on Alfalfa and chemically treating barn yard waste.
F. G. DOKKENWADEL Coshocton, Ohio.

RAISE BELGIAN HARES For Us
HUGE PROFITS easily, pleasantly made. We furnish stock and pay you $6.00 a pair and express charges for all you raise. Contract and book "Fortunes in Hares," 10c. Nothing free.
NATIONAL FOOD & FUR ASSOCIATION
Dept. 19 557 12th St., Milwaukee, Wisconsin

SQUAB BOOK FREE
Make money breeding PR squabs. 1917 markets highest on record. Start at once. Enlarge. We teach you how to sell best as well as how to raise. Write at once for this big free book to the founder of the squab industry. PLYMOUTH ROCK SQUAB CO., 503 HOWARD ST., MELROSE HIGHLANDS, MASSACHUSETTS.

Away with DEADLY POISONS
RAT CORN
KILLS RATS, MICE AND GOPHERS
25c 50c and $1.00 ALL DEALERS

DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for $1.
HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

Summer Clubs

These quotations are for a limited time only and may be withdrawn without notice.

1. McCall's Magazine, Farm and Fireside — One year 85c
2. Today's Housewife, Farm and Fireside — One year 85c
3. Woman's World, Farm and Fireside — One year 75c
4. People's Home Journal, Farm and Fireside — One year 85c
5. McCall's Magazine, Woman's World, Farm and Fireside — One year $1.00

Send orders to
FARM AND FIRESIDE
Springfield, Ohio

Boys!
Win These Prize Ewes

THE Bradley Sheep Club offers sixty flocks of bred ewes as prizes to stimulate interest in sheep raising and to increase wool production. Any boy between the ages of 13 and 17 inclusive, is eligible for one of these prize flocks. In five years the flock you win will earn enough to send you through college. This is your chance to learn a profitable industry and help clothe and feed our soldiers. Prizes awarded on merit only.

Write us for Free Booklet On Sheep Raising by Mr. Anthony Gould of the American Sheep Breeder. Full details of contest will be sent with booklet.

BRADLEY KNITTING CO.
1034 Bradley Avenue
Delavan, Wisconsin

Bradley Sheep Club

Crops and Soils

Arid Belt Wheat

By M. Baird

EXPERIMENTS have been conducted at the Fort Hays, Kansas, Experiment Station with green manuring crops compared with fallow in wheat production. The rotations followed were fallow, wheat, corn, barley; cowpeas for green manure, wheat, corn, barley; rye for green manure, wheat, corn, and barley.

In the first rotation where fallow was used the average yield for eight years was 21.3 bushels an acre. When cowpeas were used in place of the fallow the average yield was 13.4 bushels an acre, and when rye was used as the green manure crop the average yield was 12.9 bushels an acre. In addition to the differences in yield there was considerable extra expense encountered in seeding the green manure crops. In view of these facts, green manure crops should be used only as a last resort.

The straw produced in the wheat belt is a valuable by-product of the wheat industry, and should be returned to the field instead of being allowed to decay in large piles in the field or, even worse, burned to get it out of the way.

Straw may be used satisfactorily in two ways—as bedding for live stock and later applied in the field, or it may be applied direct as a surface dressing during the late fall and winter months. When applied in this way the straw will have decayed sufficiently to have no bad effect upon the soil when plowed under the following season. Besides adding considerable organic matter to the soil, straw will aid in preventing blowing, in retaining the moisture that falls as snow, in preventing winter-killing, and will add considerable plant food to the soil.

Undoubtedly manure is the best form in which to apply organic matter to the soil. It has all the advantages of green-manure crops and straw, and many more, for it decays more rapidly and adds much larger quantities of plant food. With manure as with straw, many objections have been made to its use throughout the areas of light rainfall. Some of these objections are due to too heavy application, poor seasonal conditions, or are purely imaginary on the part of the farmer because he doesn't enjoy hauling and spreading manure on his fields.

It is true that yields have been decreased through the use of manure in various places, but invariably the decrease has been brought about by carelessness in applying very large quantities. Such applications will tend to cause the plants to make a very rapid and heavy growth of straw in the spring and thus use large quantities of water and not leave sufficient moisture to mature the crop; or, if the season proves to be extremely dry, the heavy application will cause a burning of the crop early in the season and thus decrease the yield.

Reasonably light applications, however, will increase the present yields and aid in keeping the soils in good condition. Experiments conducted over the hard-wheat section of Kansas during the last three years justify this statement. In 1914 experiments were conducted with manure on wheat in six localities. The average yield of the manured fields was 24.4 bushels an acre, and of the unmanured, 21.45 bushels.

In 1915, experiments were conducted in three localities in which the manured fields averaged 26.55 bushels an acre as compared with 20.47 bushels for the unmanured fields. The experiments were conducted in nine localities in 1916, with an average yield of 22.55 bushels an acre on the manured fields and 17.75 bushels on the unmanured fields. The average increase from the use of manure on wheat from the eighteen determinations extending over a period of three years is 5.64 bushels an acre. The amount of manure applied on these fields varied from six to ten tons an acre. Heavier applications than this should not be made, and lighter applications are advisable.

If the fertility of the soils of the light rainfall area of the United States is to be maintained, more live stock must be kept and the best possible use made of the manure produced. By-products from the grain fields should also be used.

Because of the Great War, many elderly men who haven't done much active work for several years are doing their "bit" this year during the harvest

To Prevent Soil Blowing

HEDGE fences are effective in the prevention of soil blowing, and should be set out by farmers where damage is done through this cause. Evergreen hedges are the best. They present a good appearance throughout the entire year, and cut off the wind from the surface of the field where the most damage is done through soil blowing. Good varieties to set out are red cedar, Austrian pine, Western yellow pine, and Chinese arbor vitæ.

If ordinary Osage orange hedge is already set out, do not cut it down. The soil nearest the hedge will not yield a profitable crop of grain, but a strip of alfalfa two rods wide may be planted along side of the hedge. The alfalfa will yield a good crop, as it is not harmed by partial shade. The hedge will act as a windbreak and all the ground will be profitably utilized.

To Have a Good Pasture

By A. M. Paterson

PEOPLE should pay more attention to pasture management in order to realize fair interest on the valuation of their property.

While better results in pasturing are obtained early in the season on burned-over fields, the ultimate effect upon the stand of grass, and especially of the choice forage stand, is bound to be bad. The burning cannot help destroying the crowns of many of the plants and also much of the seed that might have been dropped the previous year, as well as any plantlets just starting.

The early growth of grass left without any protection from the previous year's crops, together with early grazing while the soil is damp, provides ideal conditions for the weakening of many plants and the total elimination of the choicest, tenderest of them sooner or later under the burning system of pasture management.

Some work has been done in mowing to control weed growth. Results to date indicate that weeds can be effectively controlled, especially on the level areas where weeds are growing to the exclusion of all forage plants. Where the grass stand is good and the weeds are few, mowing has been detrimental to the growth of grass even when cut as late as August 15th.

How I Was Swindled

[CONTINUED FROM PAGE 10]

some minutes to decide whether I should pay up, doubling the amount already handed over, or drop out, losing the amount paid in and seeing the next man win a good-sized stake.

Unfortunately I decided to stay in the game, with the same result, till I had lost $10. Even then I was so enwrapped that it took all the courage I could possibly muster to back away from that machine. But I did escape, and never inquired whether those that came after me won or lost. PENNSYLVANIA.

Sign-Painting Cost $45

FATHER had often bragged that no man could "beat" him. But one day a fine-appearing gentleman drove up to our gate and called, "Hello! Hello!" Father and the boys, who were in the back yard, came forward to see what was wanted. The stranger addressed Father as follows:

"I am traveling in the interest of a large concern which is advertising its wares in the following way: We look for conspicuous places, one in each township, and endeavor to gain the permission of the owners to have a sign painted on their barns. For these signs, such as I can paint on your barn, we pay $5. I should also like to put my horse in and take dinner with you."

Father thought the matter over and finally consented. The work being done, the agent gave Father the $5, and also a receipt blank which he signed.

Some sixty days later, Father received notice from the bank that his note for $50 was due, and Father then and there had a fit! IOWA.

Oculist Didn't Fill Orders

A TRAVELING oculist came to our small town, took lodging with a private family, and rented one of their rooms for his office. He had printed circulars with him, and engaged boys to distribute them over the town. Printed on these circulars was a statement that at certain hours he would test eyes free of charge.

Having had trouble with my eyes, I went to him to have them tested. After testing my eyes, he said I would have to wear glasses. He described the kind and told me the cost.

Now, I was not the only one that bit, when he said: "Pay me to-day, and the last of the week I'll send them packed in a wooden box from the main office."

I paid him, and I am still waiting for the glasses. That was three years ago. OHIO.

Title Wasn't Clear

A FEW years ago I lived near a small town in Indiana, where we attended church and Sunday school. The Sunday-school superintendent, Mr. R., and the class leader, Mr. W., were both devoted to the church and all its interests, and also to each other. Mr. R. lived in the country, about three miles from town. He had a fine farm, well stocked, also another piece of land nearer town, about 80 acres.

Mr. W. lived in town and had by frugality saved some money, and wished to invest it in land. Mr. R. offered to sell him his piece of land near town, and the deal was made, Mr. W. paying a good price. He did not ask for an abstract of title, as Mr. R. assured him it was perfect and everything all right.

Time passed, and Mr. W. died. Some time later his widow decided to sell the land. A purchaser was found, and he asked for an abstract. In having it made out for him it was found that Mr. R. had, some time previous to selling it to Mr. W., put a mortgage of $1,000 on the land. He, of course, had kept the interest paid. The widow called on Mr. R., who said he had nothing to pay it with, as everything was in his wife's name. The widow and children lost it. WASHINGTON.

Foolhardy Fire-Kindling

By Mrs. M. R. Morris

I WAS a bride of about one year. I had come in from my garden to start the dinner fire. I placed the kindling and wood and then turned to get the oil can to pour on a little oil, as the fire smoldered. I was singing, and my mind must have been busily occupied. But I "came to" and suddenly realized what I was doing just as I was in the act of tipping a can of gasoline over my smoldering fire.

I have always felt that I am living now by mere fortune. My two cans, kerosene and gasoline, were always kept side by side, the gasoline can painted a bright red for warning, but I had failed to notice, and I have never used either since to start a fire.

W

Poultry-Raising

Soda Fountain Egg Trade

By J. T. Raymond

THE drug-store trade represents an opportunity for poultry keepers near cities and large towns. The best drug stores often display eggs in large glass bowls, and make an advertising point of their high quality. Infertile eggs get the preference in this trade, and stores like to buy of near-by poultry keepers who can bring in eggs often and with whose farms they are personally acquainted. Select drug stores pay the retail price for eggs, and sometimes a premium, requiring large, well-shaped, clean eggs of uniform color. Some drug stores sell cartoned eggs to their customers.

The drug store represents a splendid chance to work up a direct-to-the-consumer trade. One New England poultryman started supplying the leading drug store in a city of 20,000. His farm, carrying several hundred layers, was in an adjoining town on a car line. He produced infertile eggs.

Through the publicity the drug store gave him, opportunities by the score came to him to sell direct. Now a large portion of his production the year round is sold at retail prices. Numerous customers come to his farm to buy eggs for invalids.

In the spring he does a large business in eggs by the case for water-glassing, obtaining for his infertile eggs a premium of three to five cents a dozen. Institutions are good customers. He caters to this trade, believing there is going to be tremendous increase in the use of water glass.

"A drug store is one of the best customers a poultry keeper can have," declared this man. "Besides yielding an additional profit, this trade makes a reputation for you quicker than a large amount of self-inspired paid advertising."

Watch the Meat Rations

By Vincent Lee

ALL of us who have used commercial meat foods for our poultry have noticed that some of it may be safely fed with good success. When other lots are purchased and similarly fed, there is a marked tendency toward sickness among the birds.

It is a good plan to remember that the best grade of meat scrap is made of meat that has been cooked for a number of hours under steam pressure. This renders the fat and completely sterilizes all bacteria of an unhealthful nature that may have been in it originally. Such food very rarely causes sickness in the birds that eat it. Then, there are low-grade scraps that have not been treated in this way. On the contrary, some of it has had strong chemicals put into it for the purpose of preserving it. It need not be said that meat scraps cured this way are positively dangerous, leading to sickness and perhaps loss of high-priced fowls.

A good thing to do is to watch the effect of feeding all brands of scraps, and when we find those that are clean and healthful, stick to them, even if they do cost a little more than some others.

Somehow our birds must get plenty of animal protein. Those who try to get along without it find that their birds do not do as well as when this kind of feed is furnished. One of the best poultry feeds of the farm is milk. On so many farms it is fed to everything except hens, that they come last. But hens will take milk and turn it to as good advantage as any creature on the farm. Wherever meat scrap is prohibitive in price, milk ought to be used freely. Whey is all right too, although it has not the feeding value that milk has. Not all of us realize the worth of bone and its products in this connection. This has a high value, coming close up to meat scrap, and is fine when crushed and dried for little chicks.

BECAUSE a man is an ardent fancier, it doesn't follow that he is an expert breeder. He may admire greatly his special breed for their beauty or other qualities and still lack the ability to reproduce those qualities. There's a world of difference between a fancier and an expert breeder.

More Buttermilk Chicks

By Mrs. Geo. W. Church

FOR many years I believed that no form of milk could be successfully substituted for some form of meat in a poultry ration. Until last season I always used a good deal of beef scrap, but having read of the great value of buttermilk as a substitute I decided to experiment. May 15th I took off a hatch of Rhode Island Reds to be grown for market. The first few days they were given to drink only very sour buttermilk, as I have found this to be an excellent preventive of bowel trouble. Later they had water also. Their feed from start to finish was equal parts by measure of cornmeal and wheat bran mixed to a crumbly mass with buttermilk. The first week they were fed four or five time a day all they would clean up.

The buttermilk was always allowed to stand until the water or whey came to the top. This was poured off, and only the thick part used.

At fourteen weeks of age the cockerels went to market, averaging three and one-half pounds, while a buyer who wanted the pullets for layers bought them by the piece without weighing.

They had free range and were always healthy and thrifty. While the addition of beef scrap might have given a rather faster gain at an added cost, I was satisfied with the result.

For many years I started all my chicks on a cake made with equal parts by measure of bran, meal, oatmeal, middlings, and beef scrap mixed with buttermilk and baked. I fed this exclusively the first week, then supplemented it with chick feed for two weeks, when it was omitted, and chick feed and dry mash were used until chicks were old enough to have cracked corn and wheat. This method made more work and gave no better results than was obtained in last season's experiment. With chicks kept in confinement results might be different.

I know of several farmers who are getting good results from hens and chicks having no form of meat food except milk. On one farm an average of 2,000 hens have been kept for many years. These and the chicks raised each season consume the milk from about 20 cows. The owner claims it is far more profitable than if the milk were fed to hogs. In many instances the milk is soured, warmed enough to separate, and the whey poured off, using only the curd, thus eliminating a large per cent of water.

This type of poultry cars save much loss in death rate and shrinkage in hot weather. About 4,000 average-size chickens fill the 128 coops

Good-Health Talks

By DAVID E. SPAHR

IN ANSWER to a question how to build a fly trap: Make a circular base about one foot in diameter from a board one-half or one inch thick. With a keyhole or compass saw cut out the main central part of this base, leaving a rim of about two inches in width. Make a top piece with the same outside diameter as the base, leaving it entire. Nail these about two feet apart with four to eight laths or other thin strips of wood, forming a cylindrical frame. Countersink the laths even with the outer edges of both the top and base. This will allow the wire screen to fit snugly around the edges of the top and bottom. Cover the sides of this cylindrical frame with ordinary screen wire. Mosquito netting will do for a temporary trap. Care must be taken to make the edges fly-tight. Then make a cone-shaped inner base of ordinary screen wire to fit the hole cut in the wooden base. A small opening about one-quarter inch in diameter should be left at the top of the cone so that the flies will have easy access to the cage. Tack this wire cone snugly in the hole cut in the wooden base so that it extends up into the cage about eight inches or more. Now fasten from four to eight nails or screws into the bottom board to hold the trap about one-half inch above the surface. This space is sufficient for the entrance of the flies to the bait which is placed underneath the trap.

For Hay Fever

I am troubled with hay fever and bronchial trouble every year in September. I have heard that there is a serum treatment. Can you tell me about it?
R. K., Ohio.

THERE are drug firms engaged in the manufacture of hay-fever vaccine in all parts of our country. They manufacture a serum from the pollen of timothy, rye, and redtop for spring hay fever. Then from the pollen of ragweed, goldenrod, and maize they make a pollen extract for the fall epidemic, beginning in September. Any physician can obtain the vaccine and administer it to you.

Nose Bleed

Often my nose bleeds two or three times daily. Is it alarming? I am perfectly healthy, and am nineteen years of age. *A. M., Michigan.*

UNLESS the bleeding is very profuse, it is usually harmless, and sometimes beneficial by reducing congestion about the head. It may come from a small catarrhal ulcer in the nose—a bleeding point. A ten per cent antipyrine solution applied to the bleeding point and left there will stop the bleeding.

Clear Face of Pimples

I have some pimples gathering on my face, and I have such a tired feeling.
B. E., Georgia.

TAKE a teaspoonful of effervescing phosphate of soda in a glass of water before meals, as your trouble is due to digestive irritation. Bathe your face with real hot water, and apply some cold cream to the pimples.

Canities

I am twenty years old; my hair is turning gray, beginning around the temples. My hair falls out about twice a year, and when it comes in some of it is gray. What can I do to turn it to its natural color? Is electrical treatment beneficial? *W. T., Connecticut.*

FOR your alopecia you might use the following hair wash: Potass. carbon., ½ dram; ammon. carbon., ½ dram; glycerin, 4 drams; aqua, 8 ounces; spr. vini., 8 ounces; ol. lavendal, 6 drops. Mix, and wash the hair with good brush vigorously. I have had no experience with electricity.

Diseased Tonsils

My little daughter has enlarged tonsils. They are nearly twice the natural size. She breathes through her nose, sleeps with her mouth tightly closed, has never been troubled with tonsilitis, and the only apparent inconvenience is somewhat labored breathing. Will you kindly recommend treatment, or do you advise removal of tonsils now or later?
W. H. S., Colorado.

DISEASED tonsils are a source of great infection, and are an active factor in producing rheumatism, goiter, tuberculosis, etc., and should be removed. The younger children stand removal better than older ones, and dread it much less. I would advise you to have them removed immediately by a good surgeon.

Whole Wheat and Malted Barley skillfully blended and processed make Grape-Nuts a most delicious food in flavor as well as a great body, brain and nerve builder. "There's a Reason"

Girls! Your Country Needs You

Miss S. Wassmann, graduate of Gem City, receives $1260 per year as Secy. Ill. Industrial Board. Women are needed to take men's places as Stenographers, Accountants, Private Secretaries. GEM CITY BUSINESS COLLEGE—Est. 1870 We have complete courses in business, civil service or commercial teaching, also. Write for Year Book. U. L. Musselman, Pres., Lock Box 14, Quincy, Ill.

CIDER Making Pays

With Mt. Gilead Hydraulic Cider Presses Thousands are making Big Money with our presses—why not you? Sizes 10 to 400 bbls. daily; hand or power. Cider evaporators, apple-butter cookers, vinegar generators, filters, etc. Fully guaranteed. All power presses have steel beams and sills. Catalog Free. HYDRAULIC PRESS MFG. CO. 106 Lincoln Ave. Mount Gilead, O.

It is to your interest to mention Farm and Fireside in answering advertisements.

Rider AGENTS Wanted

in each town to ride and show a new 1917 model "RANGER" bicycle. Write for our *special offer* on a sample to introduce. DELIVERED FREE on approval and 30 days' trial. Send for big free catalog and particulars of *most marvelous offer* ever made on a bicycle. You will be astonished at our low prices and *remarkable terms*. 94 STYLES, sizes and colors in Ranger bicycles. Most complete line in America. Other guaranteed models $11.95, $14.75 and $17.60. A few good second-hand bicycles taken in trade, $3 to $8 to clear. Tires, lamps, wheels, sundries, parts, and all bicycle supplies *at half usual prices*. Do not buy until you get our catalog and offers. *Write Now.* MEAD CYCLE CO., DEPT. B-83, CHICAGO

Recipe by Jean Prescott Adams
Domestic Science Author and Advisor

Tasty Spiced Ham prepared in the "Wear-Ever" Aluminum Roaster

Cover ham with cold water and let simmer long enough to loosen skin. Remove skin, place in a "Wear-Ever" Aluminum Roaster; add one teacup of vinegar, one cup of hot water in which one teaspoon of dry mustard has been dissolved. Bake slowly two hours. Cover ham with coarse brown sugar, and stick cloves into fat about inch apart. Allow sugar to form thick crust. Bake one hour longer.

The "Wear-Ever" Roaster makes possible the preparation at one time of an entire meal in oven or on top of stove—a roast, baked potatoes, macaroni, rice pudding, etc. Thus you spend less time in the hot kitchen.

Replace utensils that wear out with utensils that "Wear-Ever"

Send for the sample 1-quart Stewpan. Only 30c

The Aluminum Cooking Utensil Co.
New Kensington, Pa., Dept. 57, or (if you live in Canada) Northern Aluminum Co., Ltd., Toronto, Ont. Send, prepaid, 1-qt. "Wear-Ever" Stewpan. Enclosed is 30c in stamps—to be refunded if not satisfied. Offer good until August 20, 1917, only.

Name.....Address.....

If you have ever traded and been beaten in a horse exchange you will have a laugh out of this story

The Boomerang

They Named Him "Congress" for a Very Good Reason

By MERRITT P. ALLEN

ELIHU ARNOLD was of medium height, but as he leaned against the picket fence thoughtfully stroking his stubby gray beard and waiting for the afternoon mail, the sun threw a long shadow behind him almost to the steps where his wife sat culling dandelion greens.

"Mary," he remarked after a while without turning around, "I'm gittin' uneasy for a hoss trade."

"I should think you would, seein' how well you done with the last one," she returned sarcastically.

"That wasn't so bad," Elihu defended, straightening up. "Of course I didn't make much, but I got out of it."

"So'd Jonah git out of the whale, but he got everlastin'ly took in first," his wife retorted.

Elihu sighed. Mary was stout and red-faced, and in most respects an admirable helpmate, but she was too prudent, for she would play on the safe side or not at all, and, as everyone knows, there is no safe side in a horse trade. For this reason she was adverse to such transactions, and right there she and Elihu clashed. He read about horses, thought about horses, talked about horses, and smelled of horses the whole year round. To him the attack and defense of a horse trade were the nectar and ambrosia on which he could thrive forever.

So he sighed again and leaned back on the fence, from where he was removed by the sound of the carrier's wagon rattling down the road. He came back presently walking slowly and reading a letter.

"I've heerd from what'sname," he announced at the foot of the steps.

"I suppose he's brother to whatyoucallit," Mary remarked, still thinking of that horse trade.

But Elihu was too engrossed in the letter to notice this shot.

"He's got our price for the land," he exclaimed after reading farther.

"Oh," Mary was suddenly interested, "it's the real-estate man from St. Albans?"

"Yep; he says he had to hang on like a puppy to a root to git it—not them exact words, but somethin' to that effect."

"That's three hundred dollars clear," Mary calculated aloud. "Show me where you ever made that much with your horse-swappin'."

She had been instrumental in buying the land in question, so she felt justified in this remark. Elihu, to whom such questions were a bore, handed her the letter to postpone more words of this kind, and waited.

"Well," she commented at length, "you're to draw writin's Thursday. Today's Monday. I'll have your white shirt washed and ironed and your Sunday suit cleaned by then. You won't have to start till Thursday mornin'."

Elihu sat down on the steps.

"I thought I'd start to-morrow," he ventured.

"To-morrow?"

"Yes; I thought perhaps I'd drive."

"Drive, when the train goes right there?"

"Yes," he answered slowly, "I thought that perhaps your cousin George, who's boardin' at the hotel, might like the ride. The country's so beautiful this time of year and the scenery is—"

"Cousin George! Beautiful country! Scenery!" Mary ejaculated energetically. "Elihu Arnold, you don't fool me. You're goin' to drive so you can trade horses on the way."

Elihu grinned sheepishly.

"Of course, Mary," he said, "all I thought of was givin' George a little ride, but now that you've spoke of hoss-tradin', mebbe I will look around a little." And without more comment he went out to the barn and hitched up the black colt behind which he proceeded to town in quest of Cousin George.

George H. Winter, who, save for a month each summer, dwelt in the city of New York as a lawyer, was not unfavorable to the proposition which Elihu advanced to him. For many years this hearty little man, whose round, shining face and stubby beard reminded him of a whisk broom on a harvest moon, had held a warm place in his heart, and the prospect of a four-days drive with him through Vermont in her best attire was a very pleasant one indeed. So arrangements were completed without delay.

It is eighty miles from Burley to the little town just outside St. Albans where the land was situated, and Elihu and Winter left early Tuesday morning behind the black four-year-old in high spirits. They passed the first night on the road, the next in the city, and, after transacting their business on Thursday, started on their return Friday shortly after sunrise.

It was a beautiful morning, and to get the full benefit of it they took the lake-shore road instead of turning inland the way they came. The four-year-old, now that he was turning homeward, broke into a long swinging trot and scarcely slackened his pace for two miles, when he was brought to a walk by a hard hill.

"Well, old feller," Elihu remarked to him, "I ain't seen a hoss that I'd give you for yit, and I reckon I've sized up everyone I've seen."

At the top of the hill the colt was breaking into a trot again when Elihu pulled him up short.

"By time, George," he exclaimed, "look there!"

Winter looked and saw, just over the fence in a pasture, a tall bay horse whose coal black mane and tail and sleek sides shone in the morning sunlight. Before he had taken in these details Elihu had handed him the reins and was out of the wagon.

"That's a fine hoss," he was saying, "a *mighty* fine hoss. He must stand all of fifteen hands and weigh round 'leven fifty. I'm goin' to look him over." And he climbed the pasture fence.

All horses seemed to know Elihu Arnold. Mary said it was because he was such a jackass himself,

"Mary," he remarked, "I'm gittin' uneasy for a hoss trade"

but, then, Mary was always saying things that she did not mean. Whatever the reason was, this horse was no exception and came nickering up to him. Elihu stroked his soft nose, ran his hands along his straight back and down his smooth legs, looked in his mouth, lifted his feet one by one, and stepped back to eye him admiringly.

"He ain't more'n seven," he called back to Winter, "and he's wuth three hundred if he's wuth a cent."

They were both so engrossed in the animal that they had not noticed a man coming up the road. He was a young man, a tall, loosely put together fellow, carelessly dressed, and he now took part in the conversation.

"He is a pretty good horse," he remarked, stopping by the fence. "I own him."

Elihu turned quickly, and walked slowly toward the fence.

"Why, he's a fairly good-lookin' hoss," he admitted. "I was jest lookin' him over to see if he'd match up with one I've got to home. But he ain't more'n fourteen hands high, is he?"

"Fifteen," the stranger answered with an easy smile.

"Does he," exclaimed Elihu in evident surprise. "But, then, he's so fat it makes him look shorter. Must weigh round thirteen hundred?"

"Eleven sixty a year ago," the younger man answered.

Elihu feigned surprise again, and remarked as he climbed up on the fence, "I ain't much of a hoss jockey myself, anyway. You don't use him much do you?"

"No," was the frank answer, "I don't. Fact is, I haven't had a harness on him but twice this summer. I hoped to enjoy him, but my wife's been sick and I haven't had any time." His face took on a careworn expression that spoke of more troubles than he cared to mention to strangers. "I got him for her," he added. "I don't need him, but a party owed me a debt so I took him."

Elihu balanced himself on the top rail and commenced whittling on a sliver.

"I dunno," he mused, "as he'd be such a bad mate for my hoss. What'll you take for him?"

"Two hundred," was the answer after a moment's hesitation.

"Mebbe that's cheap enough," Elihu said, "but I guess I've got hosses enough without him anyway."

"Where do you live?" the young man questioned.

"Burley."

"York State?" asked the other, for from where they were Burley, New York, and Burley, Vermont, were about equal distances.

Elihu was about to tell him that it was Burley, Vermont, when a thought seemed to strike him suddenly.

"Say," he asked, apparently thinking of it for the first time, "you wouldn't *trade* hosses would you?"

The stranger smiled faintly.

"I'd have just as many horses then," he said, "and I want less."

"Well," Elihu suggested, "you wouldn't be any wuss off."

"No," he agreed, "I wouldn't be any worse off." He said it with another easy smile that Winter remembered afterward.

"How'll you trade?" Elihu persisted.

The young man did not reply. Instead, he went over and examined the black colt and then looked across at the handsome bay.

"What do you call your horse worth?" he finally asked.

"Two and a quarter," Elihu valued him.

"On account of the war, horses are pretty high," the other answered, "but I don't believe I want to trade."

"Is he sound?" Elihu asked.

"Sound as a nut."

"Good roader?"

"Excellent."

"Kick?"

"I won't warrant him. I tell you I haven't driven him enough to know him."

Elihu climbed slowly into the buggy before delivering his ultimatum.

"I'll give you twenty-five dollars to boot," he declared, looking hard at the man by the roadside.

The young man thought for some time.

"You can have him," he said at length, "but I tell you again that I won't absolutely warrant him. Do you want to try him?"

Elihu looked at his watch; the forenoon was wearing away and they had a long drive before them.

"No," he said, "I'll resk him. If I git beat it won't be the fust time."

He began counting out the money as he spoke and within ten minutes the horses were changed. Once more they climbed into the wagon and were away. The stranger watched them out of sight with the same easy smile on his face and then turned the black colt into the pasture.

For perhaps two miles the bay drove beautifully; his long, rapid strides were a delight to see and Elihu chuckled aloud.

"George," he exclaimed delightedly, "I guess I've made a trade this time that Mary can't pick to pieces. I never see a handsomer hoss or a better driver. Giddap, there!" and the horse redoubled his pace apparently without an effort.

"Still," Elihu continued after a while, "there may be somethin' mean about him. I half suspect there is, but we'll find it out quick enough."

They did. Within half a mile the bay stopped. "Giddap!" said Elihu, slapping him with the reins. But there was no move; instead he turned his head on one side and rolled the white of one eye at his new owner. Elihu swore aloud. He was not ordinarily a profane man, but there were times with him when profanity seemed entirely appropriate to the occasion. This was one of them.

"What's the matter?" Winter inquired innocently, for he was uninitiated in equine mysteries.

"Matter!" snapped Elihu. "He's balked; that's what the matter."

"Perhaps not," Winter encouraged, taking the reins which his companion had dropped in disgust, and slapping and clucking in vain. They both got out and Elihu took the horse by the bridle, but he would not be led; neither would he be backed. He seemed perfectly satisfied with his present position in life.

"I've read," ventured Winter, "that a balky horse would start if you put dirt inside his under lip."

Elihu grinned.

[CONTINUED ON PAGE 19]

W

The Eyes of the World Are Upon The Gory Battlefields of France

Already a contingent of our American soldier-boys have joined the Allied Armies. *YOU*—as a good American—must familiarize yourself with places and conditions in Europe

To Follow the Flag Intelligently—You Need

FARM AND FIRESIDE'S NEW WORLD'S GREATEST WAR ATLAS

THIS splendid Atlas is just off the press. It is the most pretentious book dealing with the war yet issued—it contains 32 pages, 10½" x 15½" in size—it is beautifully printed in colors and profusely illustrated, it covers every phase of the World War. Maps and pictures visualize the great struggle, bringing it home with a force that is thoroughly convincing. You cannot turn the pages of this Atlas without realizing the tremendous gravity of the situation which confronts the American people.

In this book you get the essence of the lessons learned on the bloody fields of Europe. In it you will find the concrete results of many months of hazardous and laborious work on the part of dozens of writers, photographers and draftsmen. You will find diagrammed every move of the different armies from the beginning of the war down to the present time. The recent brilliant offensive of the French and British armies is diagrammed in a special double-page map in four colors, drawn five miles to the inch. This map shows the positions of the French, British and German armies, both before and after the Great German Retreat; it shows every village and every fortress on the western battle front. Reproductions of actual photographs show the terrible destruction wrought by the German army in its retreat—the hopeless ruin left behind by the Teuton soldiers—explains why the whole world trembles when the Kaiser says "I will."

THIS Atlas contains halftone portraits of the great military men of the warring countries, there are also pictures of President Wilson, Secretaries Baker and Daniels, and other prominent Americans. The newly developed instruments of warfare are all shown in pictures, many of them taken during action. The caterpillar tank, the great surprise of the war, is shown in operation, anti-aircraft guns, mines, trench mortars, periscopes, the Lewis machine gun, gas masks, contact mines, star-rockets, search lights, Zeppelins, all are pictured, while uniforms and equipment of the troops of various nations are shown in photographs taken at the front. Then there are maps of Europe, France, Turkey, Germany and all other countries involved, twelve page and double-page maps in all.

You need this book to picture in your mind the kind of warfare in which we Americans will soon be engaged, you need it to bring home the seriousness of the situation which we face, you need it to enable you to act wisely now that conscription has come, you need it because it describes conditions which may dominate your whole career, mental, physical, moral, material, for years to come. Remember, this is the greatest war of all the ages. No man can say how long it will continue nor what its end will be. It may last for years and consume the flower of American manhood in its merciless maw.

You Can Have a Copy for 25 Cents

With a Six-Months Subscription to FARM AND FIRESIDE

We are making this exceptionally low-priced offer in order to get as many of these books as possible into the hands of FARM AND FIRESIDE readers. This Atlas answers a long-felt need. People are watching the newspapers anxiously for the latest news from the front. With this book you will be able to follow the moves of the various armies with precision and understanding. We urge you to send in your order now. Clip the coupon to the right and mail it to-day without fail, *send your own renewal or the subscription of a friend.* If you are paid ahead, we will extend your time six months.

You may also have this Atlas for a club of FOUR special three-months trial subscriptions at 10 cents each. See your neighbors. Surely you can induce four of them to pay you 10 cents each. Send in the names on a separate sheet and we will mail you the Atlas postpaid.

Clip the Coupon

F. F. E. 111.

FARM AND FIRESIDE,
Springfield, Ohio.

Herewith please find 25c for which send me, postpaid, a copy of your new World War Atlas. Also {enter / extend} my FARM AND FIRESIDE subscription for six months.

Name .....

P. O. .....

St. or R. D. .....

The right to refund money is reserved in case Atlas supply is exhausted when this order is received.

FARM AND FIRESIDE

SPRINGFIELD, OHIO

This Offer is for 10 Days Only or as Long as the Supply Lasts

Clip the Coupon

ROYAL BAKING POWDER

Saves Eggs in Baking

You can use fewer eggs with Royal Baking Powder. A great advantage in these days of mounting food prices.

In most recipes the number of eggs may be reduced one-half or more and often left out altogether by using a small additional quantity of Royal Baking Powder, about a teaspoon, in place of each egg omitted.

Every mail brings to us letters from women who are enthusiastic over their success with this new method. One mother writes:

"Nothing like Royal Baking Powder. My little girl can eat biscuits and muffins made of it with no discomfort—while she cannot eat others."

Try the following recipes which are illustrations and see how well this plan works. You must use Royal Baking Powder, which is made from Cream of Tartar, derived from grapes, to get the best results—powders made from alum and other mineral substitutes often leave a bitter taste.

Coffee Cake

Very popular at the breakfast table and most appetizing when freshly made at home and served hot.

2 cups flour
½ teaspoon salt
2 tablespoons sugar
No Eggs
4 teaspoons Royal Baking Powder
2 tablespoons shortening
½ cup milk

DIRECTIONS:—Mix and sift dry ingredients. Add melted shortening and enough milk to make very stiff batter. Spread one-half inch thick in greased pan, add top mixture and bake about one-half hour in moderate oven.

(The old method called for 2 eggs)

TOP MIXTURE

2 tablespoons flour
1 tablespoon cinnamon
4 tablespoons sugar
4 tablespoons shortening

DIRECTIONS:—Mix dry ingredients; rub in the shortening, and spread thickly over top of dough before baking.

Corn Bread

Everyone knows the great nutriment in corn. Here it is in most appetizing form.

1½ cups milk
2 tablespoons shortening
1¾ cups corn meal
¼ cup flour
No Eggs
4 teaspoons Royal Baking Powder
1 tablespoon sugar (if desired)
1 teaspoon salt

DIRECTIONS:—Sift the dry ingredients into bowl; add milk and melted shortening; beat well and pour into well greased pan or muffin tins and bake in hot oven about 25 minutes.

(The old method called for 2 eggs)

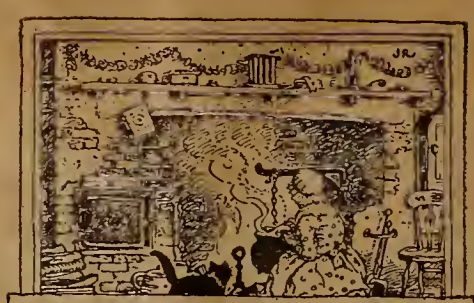
Equally satisfactory results in saving eggs may be obtained by using **Dr. Price's Cream Baking Powder, also made from Cream of Tartar, and now manufactured by this Company.**

A new book containing many practical recipes, which economize in eggs and other expensive ingredients and produce food no less appetizing and delicious, mailed free on request. Address **Royal Baking Powder Co.,** 124 William Street, New York.

Royal Baking Powder is a pure Cream of Tartar product derived from Grapes, a natural food, and adds none but healthful qualities to the food.

No Alum ***No Phosphate***

No Bitter Taste



Housewife's Club

Eliminating the Left-Overs

By Marian Wade Hunter

IT IS well to know how to use the table left-overs—how to serve them the second time so they will be palatable. But in these times, when we are all making extra efforts to use economy and thrift in our households, it is well to consider that many of the left-overs need not be. While it may not be possible always to know just how much to cook, surely close study will enable the housewife not to cook, day after day, more food than is needed.

A woman of state-wide reputation told with evident pride, when addressing a gathering of women, that she was teaching her neighbor how to economize by helping her to make use of the food left from meals. The speaker said she rescued three slices of toast which were about to be thrown out, and suggested that they be made into croûtons to serve with soup. Next she told that her neighbor's family of four always had a cooked cereal, either oatmeal or some wheat preparation, for breakfast. "There was always a coffeecupful left," she went on, "and the housewife had been throwing it away. I told her to use it to thicken soup."

Now, it seemed to some of the speaker's hearers as if the neighbor's family must subsist upon soup. The helper did not go back far enough. To have a coffeecupful of cereal left each morning showed a lack of foresight. And three slices of toast left from one meal showed the same. One cannot tell exactly how much will be eaten, but in a family where economy is necessary it would be better to let some member of the family occasionally finish with a slice of bread cut fresh from the loaf when wanted, or with a handful of crackers. And cold oatmeal can be added to that cooking in a double boiler and reheated without injuring it in the least.

It is economy to buy by the quantity, but only things that will keep well. It is not economy to buy so much fruit at a time that it must be cooked to prevent wasting and the family required to eat it stewed when they would so much prefer it fresh.

Eliminate the left-overs by careful, thoughtful planning. Indeed, it is only a new and perhaps a far-fetched application of my grandmother's oft-quoted proverb, "Let your head save your heels"—and your money.

Easier Ironing

By Monica Kelly

IN SUMMER, when any work is more or less arduous, ironing is apt to be one of the most burdensome of the housewife's tasks, and the difficulty is that in summer the amount of ironing is more than doubled because of the number of white clothes worn and the necessity for frequent changes. There are ways of making ironing easier, however, which are within the reach of almost any woman.

In the first place, she must have a good, firm-setting ironing board and a sleeveboard, and these she should locate according to the season—near the range in winter and in a breezy place in summer. The ironing board should always be placed where there is good light. To save her feet the ironer should stand on a rug or mat, and she should have a big light rack near at hand upon which she can hang clothes as they are finished, without taking unnecessary steps. A few wooden hangers for dresses and waists are convenient.

Gasoline or alcohol irons are splendid helps in saving time and fuel and in making a huge fire on a summer day unnecessary. They are easy and safe to operate, are not expensive, and may be used on the porch if the worker wishes to be out of doors.

Colored ginghams and other starched cotton goods should be ironed on the wrong side to avoid fading and to prevent ironing the starch into them so that it shows. A hot iron should always be used for starched clothes, since a cold iron will stick to starch. Gathers must be ironed perfectly dry to the end, or they will have a rough appearance.

Irons need good care, and should not be allowed to rust or become rough with starch. Wash them occasionally and wipe them off with a cloth dipped in kerosene.

Every device to lessen the amount of ironing in summer should be used by the busy farm housewife. As far as possible, use crêpe or gauze underclothing, which does not need to be ironed. Many of the children's dresses may also be made of crêpe. Fold up towels, sheets, dish towels, and bedspreads as they come from the line, and, whenever possible, make children's rompers, aprons, etc., so that they may be ironed flat.

A Simple Jelly Test

By Mary Richmond

MUCH waste of sugar and spoilage of jellies can be avoided by using a simple alcohol test recommended by the Bureau of Chemistry, United States Department of Agriculture. To determine how much sugar should be used with each kind of juice, put a spoonful of juice in a glass and add to it one spoonful of 95 per cent grain alcohol, mixed by shaking the glass gently. Pour slowly from the glass, noting how the pectin—the substance in fruits which makes them jell—is precipitated.

If the pectin is precipitated as one lump, a cup of sugar may be used for each cup of juice; if in several lumps, the proportion of sugar must be reduced to approximately three fourths the amount of the juice.

If the pectin is not in lumps but is merely precipitated, the sugar should be one half or less of the amount of the juice. If the juice shows no precipitation under this test, it is unsuitable for jelly-making, and must be combined with apples or other juices rich in pectin.

The housewife will do well before making the test to taste the juice, as fruits not as acid as good tart apples probably will not make good jelly unless mixed with other fruits which are acid.

Everyday Helps

HOME-MADE FLY PAPER—Melt one part resin with one part castor oil in double boiler, and spread on tough, stout paper. L. T., Maine.

GREEN VEGETABLES—When you cook green vegetables and wish to have them look green when served, let them cook with the cover off.
L. M. W., California.

A GRAPEFRUIT SUGGESTION—When preparing grapefruit for the table cut out the center, fill the cavity with maple syrup, and let it stand in the ice box for an hour before serving. It is delicious. C. B., Florida.

TO TAKE THE CAKES OUT OF THE PAN—It is often difficult to remove a cake from a pan without breaking it. After the cake has been baked the required length of time, place the pan containing same on a wet cloth and let it stand for a few minutes. Then run a knife around between the edge of the cake and the pan and you will have no further trouble. J. C. Z., Florida.

An English Edge

THIS quaint edging will make a very practical trimming for curtains, towels, and lingerie, as well as for thin blouses. Complete directions for making will be sent on receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

W

The Boomerang

[CONTINUED FROM PAGE 16]

"Mebbe," he said, "you might try it."

He tried it with the result that he was soon the possessor of an appearance suggestive of having embraced a mud puddle with fervor. Elihu laughed and Winter swore and reached for the whip.

"Git in here," he cried sharply five minutes later. "Here comes a team."

Winter got in silently and the team approached slowly. It proved to be a genial-looking old man with a peaked hat and a load of milk cans. He drew up opposite them and grinned broadly.

"Nice day," he remarked.

"Great," said Elihu.

"Fine scenery around here," he of the hat and cans continued.

"Greatest we've seen anywhere," Elihu replied enthusiastically. "My friend here," nodding toward Winter, "is an artist and we jest had to stop so he could drink it in, as he says."

"Wal," observed the old man with a broader grin, "he'll have a chance to git a good big drink."

"Probably," Elihu answered, "you'll see this landscape on the cover to some magazine sometime if you ever see the up-to-date literachure up here."

The old man took a generous chew of tobacco.

"By gol," he exclaimed with well-feigned surprise, "if it ain't Congress!"

"His name's Nebuchadrezzar Sennacherib Jones," Elihu corrected, indicating Winter again.

"I mean the hoss," the other explained.

"Do you know him?"

"Some. I sold him to Jim Hodges, the man you bought him of. We named him Congress 'cause he never goes very fer without stoppin' and considerin' quite a spell. Well," he called over his shoulder as he drove on, "I hope you ain't got fer to go. I'll be lookin' for that magazine cover."

Elihu took out his pipe and looked at the horse thoughtfully.

"So Congress is your name, is it?" he said. "Well, Congress, when you are ready to act the people will be with you."

All that day they traveled "steady by jerks," as Elihu said, and Winter, after the first anger had worn off, began to enjoy the trip again.

They spent the night ten miles short of where they expected to, and the second night they were fifteen miles from home. They crossed the Burley town line the next morning just as the church bells were ringing in the village a mile distant. Elihu was uneasy.

"It's just our luck," he complained, "to have him balk in the village. We've got to watch his tail close." For that was the only sign by which they could judge the bay's intentions—the violent switching of his tail a few seconds previous to stopping, and a tendency to paw before starting.

"There's Wash Daniels comin' to meetin' now," Elihu broke out a minute later. "He's allus round when he ain't wanted."

WINTER looked ahead and saw the Daniels carryall coming leisurely down a crossroad so as to intercept them at the corner. It was full, every crack and cranny being wedged tight with three generations of Danielses. When Elihu's eyes came back from them to the tail of Congress, he swore again.

"There he goes, George, there he goes," he whispered. "Git out and take him by the bits and hang on for dear life."

As he spoke Congress stopped with a jerk, and Winter taking his cue jumped down and seized him by the bridle. But Elihu was out first and, taking a wrench from under the seat, dropped on his back beneath the wagon just as the Daniels rig drove up.

"Mornin', Mr. Winter," he called. "Hello, El, what's the matter?"

No reply, but a prodigious rattling beneath the wagon.

"Busted somethin', El?"

Elihu stuck his head out between the wheels.

"Oh, it's you, Wash," he said. "Say, you ain't got a piece of wire have you? Whoa there!" he dodged back fearfully. "George," he cried, "don't you let that fool hoss start and break my old neck!"

Winter sidled around behind Congress before he answered: "Be as spry as you can, he seems to be getting impatient."

"Drat him," Elihu muttered, "he must be made of whalebone. He's had road enough now to kill a common hoss."

The deacon did not have any wire with him, but he had a piece of leather string which Elihu, coming from beneath the wagon, accepted thankfully.

"Been tradin' horses, El?" Daniels asked.

"Eup," Elihu answered, getting down once more to adjust the string.

"Good-lookin' horse," was the deacon's comment, and he would have said more had not his wife reminded him by a punch in the short ribs with her umbrella that it was past church time. So he contented himself by leaning out of the surrey and looking backward until they rounded a bend in the road.

When the carryall was out of sight Elihu came from under the buggy once more.

"That wagon busted mighty quick, didn't it, George?" was all he said.

Winter laughed uproariously.

"If I had some of your ingenuity," he said admiringly, "I would win more cases than I do."

A few minutes later they drove into the village. Congress, head and tail erect, swept through the streets, his feet falling as lightly as though treading on eggs. They met several teams and passed some, and as they whirled past the church Winter caught a glimpse of Deacon Daniels' face pressed tight against the window of his pew. Without another stop they reached home, and as quickly as possible Congress was unhitched and turned into the back pasture.

Time passed. George Winter returned to the city, and September commenced pointing with a crimson finger toward October, but still Congress ran in the pasture, growing fat and handsome every day. The fact that Elihu did not drive his beautiful bay provoked some comment, but he was ever ready with satisfying answers, so no one learned the truth, and you may be assured that he forgot to tell anyone.

For some reason he had been unable to find anyone who cared either to buy or trade for Congress; probably because he never showed him. It did not appear as suspicious so long as the horse could be at pasture, but when winter came there would be no excuse, and in vain did Elihu scratch his head and try to find a way out. As autumn came on he could think of nothing else, for the time was fast coming when he must show his hand. Tired of practicing deceit any longer, he had about decided to tell the truth and run the chances when, on a bright September morning, Deacon Daniels changed the whole face of the situation.

The deacon had had his eye, privately of course, on Congress ever since that Sunday morning. A fancier of horses himself, the picture of the beautiful bay would not leave his mind. Often during the summer, with a berry pail on his arm to allay suspicion, he had journeyed to the back pasture and there at his leisure had sized up the horse and returned each time more enthusiastic. This morning as he drove up the road he was deep in thought.

"Mornin', El," he called heartily, driving up to the barn. "Nice mornin', ain't it?"

"Eup," said Elihu, "pretty fair."

"Goin' to have an early fall you think?"

"Mebbe."

"Got your corn all cut?"

"Eup."

"Say," abruptly, "what you got for horses, El?"

"Nothin' that would suit you."

"I'M LOOKIN' for a friend," the deacon informed. "Cousin of mine. Jim Hodges is his name."

Elihu drew in his breath with a gasp.

"Lives 'bout two miles this side of St. Albans?" he asked quickly.

"Yes. Do you know him?"

Elihu laughed.

"I guess I do," he said. "I traded hosses with him once." He spoke in a vague manner which conveyed the impression that the transaction took place years before.

The deacon smiled.

"If you traded with Jim you got beat," he ventured.

"I got a pretty good-lookin' hoss," Elihu returned, "but I'll admit that he's a good trader."

"I guess he is," the deacon agreed. "He wrote me a while ago about tradin' a good-for-nothin' onto a couple of fellers from York State last summer. What about your horse, do you want to sell him?"

"Why, yes, if I can git my price—three hundred cash."

The deacon whistled.

"It's a good price," Elihu admitted, "but you don't find hosses like him every day."

"Is he safe in the harness?" the deacon asked. "Jim wants something his wife can drive."

"Now, look here at the start," Elihu announced. "I ain't goin' to ironclad this hoss to you or anybody else. I don't like the idee of a man's not buyin' his own hoss, for there's likely to be more of a kick comin' if everythin' ain't right afterwards."

"Oh, that's all right," Daniels hastened to assure him. "I'll stand back of you."

"All right," Elihu agreed. "But remember I don't blanket-warrant him. I ain't drove him enough to git acquainted with him, but as fer as I know he is perfectly safe. He's seven years old, sound as a nut, and can road better'n the most of 'em."

"Hitch him up and let me try him?"

"Sure," Elihu agreed. "Nobody ought to buy a hoss without tryin' him."

He had expected this and was prepared to risk it, for the stake was great—he was willing to chance anything for the sake of evening up with Jim Hodges. So he started briskly toward the pasture and returned in a few minutes with Congress.

The deacon watched him harness and noted the horse's docility with approval.

"Jim's wife could handle him all right," he remarked.

"Sure," Elihu agreed, buckling the last strap.

They got in and left the barn with a flourish. Elihu drove and speeded up the bay so that the deacon was obliged to hold on his hat and catch his breath.

"Well," he gasped, "he can go I should say."

They reached the corner half a mile away and Elihu was preparing to return when the deacon interposed.

"Go round the square," he commanded. Elihu's heart fell, for it was two miles around the square. But he was a sport and would play the game to a finish now it was started.

THEY started off again at a brisk pace, Elihu talking horse as usual, but keeping a sharp eye on Congress. They had gone scarcely fifty yards when the bay switched his tail violently. Elihu cast about helplessly. Though the land was his on both sides of the road, he could not command it to open and swallow either the deacon or the horse, much as he would have liked to. Then with a sudden jerk he reined Congress to the side of the road. "Whoa!" he cried, tugging at the reins. "Durn ye, won't ye stop?"

"What's the matter?" the Deacon asked.

"Come nigh forgittin' it," Elihu explained. "But while we're over this way I want you to see my colt. He's about the neatest colt for his age that I ever see." And pointing over the fence he indicated at the other side of the pasture beneath some trees a mare and colt.

"Of course," the deacon fell beautifully, "I'd like to see him. He's half-brother to mine."

"That's why I wanted you to see him," Elihu explained, "wanted you to compare 'em." And stepping to the fence he called the mare to him.

When he had exhausted that topic he found another, and so for half an hour they leaned on the fence and talked.

"He stands well," the deacon observed, nodding toward Congress.

"Eup," said Elihu with a slight cough, "that's one of his strong points."

Then the bay commenced to paw and Elihu got in.

"We'd better be goin'," he said, "it's gittin' near dinner time."

About a week later the deacon met Elihu in the village.

"The horse got there all right," he said. "I wrote Jim that I got him of you, and he answered that he remembered you well, only he thought that you lived in Burley, New York. He said to tell you that he was very much pleased with the horse and that he hoped to trade with you again some time."

"Jim's a sport," Elihu said.

And the deacon wondered what he meant.

Simple Patterns for Summer

ORDER patterns from Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

Patterns sent by first-class mail

Just the outfit for outdoor play on the beach or around the farm. This suit can be worn by a little boy as a romper without the skirt, or it makes a most convenient little bloomer dress for the active small girl. No. 3285—Child's Play Suit, Detachable Skirt. 1, 2, and 4 years. Price of pattern fourteen cents

A practical dress for the small girl, for it can be made with pretty lace and embroidery for a best dress, yet is very easy to make and to launder. It is shown above laid out flat for cutting. A touch of lace simulates armholes. No. 3204—Child's One-Piece Dress with Simulated Armholes. 1 to 4 years. Pattern, fourteen cents

The stout woman needs a well-cut pattern with straight lines for either a plain or a dressy waist. We suggest No. 3131—Blouse with Convertible Collar. 40 to 50 bust. The price of this pattern is fourteen cents

A good model for a cotton house dress or a smock for garden or indoor work. No. 3067—Slip-on Dress, Perforated for Smock. The price of this pattern is fourteen cents

An easy skirt to make with good lines. No. 3223—Three-Piece Skirt. 22 to 30 waist. Width, two and one-half yards. The price of this skirt pattern is fourteen cents

A one-piece dress suitable for linen, cloth, or silk. Comfortable for hot days. No. 3168—Princesse Dress with Deep Pockets. 34 to 42 bust. Pattern, twenty cents

Copyright, 1917, by The Crowell Publishing Company

New Puzzles

Too Much Cheese

"Give me 1½ pounds of cheese for boarders," said Mrs. Jones to the corner groceryman as she laid correct change on the counter. Schultz cut off a piece and, after placing it on the scales, said in his usual way: "It weighs 10 cents over." "Then give me only half of it, and the remaining money will buy 5 cents' worth of prunes," said the frugal landlady. How much money did she have to spend?

Answers to Puzzles

Puzzles Printed Last Issue

Rebuses

Pocketbook, earring, snowdrop, stone.

THE ORIGINAL

2-WHEEL TRACTOR

That Does All Farm Work WITHOUT HORSES

When you come to buying a tractor, whether for a farm of 80 acres, 280 acres or more, there are a number of questions you will need to ask yourself before you buy. Here are some of them:

—*Will it CULTIVATE as well as plow?*
—*Will it do ALL my farm work without horses?*
—*Will it work on plowed ground without packing the soil?*
—*Will it do the work quicker; easier; and save on hired help?*
—***Is it REALLY a one-man tractor?***
—*Will it handle as easy as a team of horses, rather than be too heavy, clumsy, and inconvenient?*
—*Do I ride on the tool where I can see the work I am doing, or will I have to have someone run the tractor while I am operating the farm implement?*

The tractor that answers these and all other farm power problems most practically, and profitably is the

MOLINE

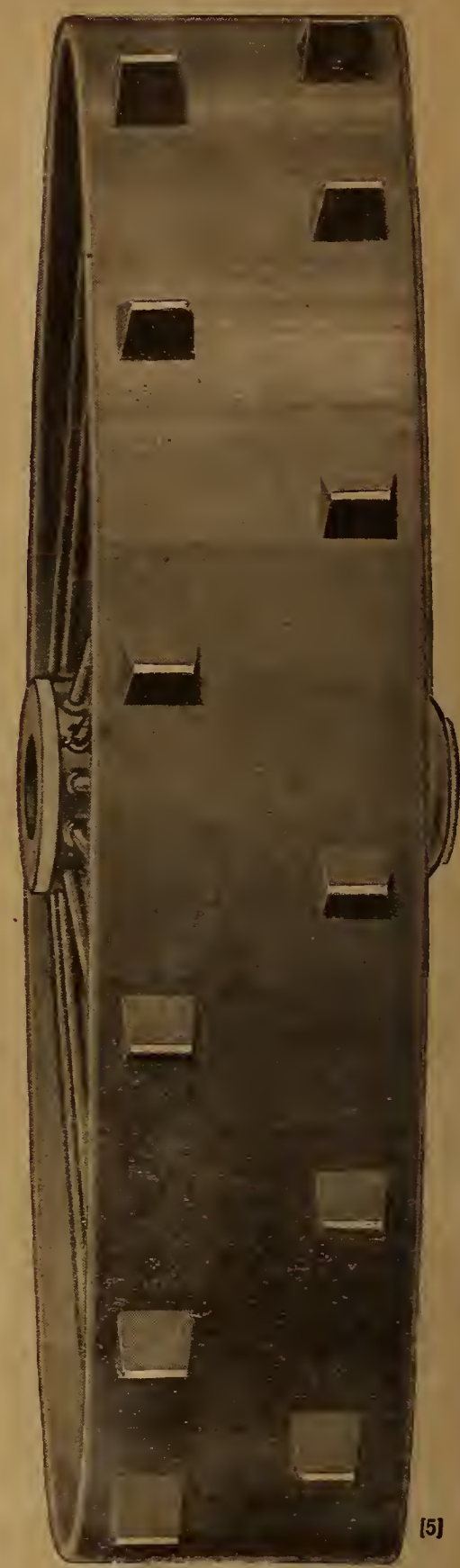
ORIGINAL 2 WHEEL

UNIVERSAL TRACTOR

This is the original Two-Wheel Farm Tractor. It pulls two 14-in. plows; will disc, harrow, plant, CULTIVATE all hill and row crops, pull mower, binder, manure spreader, fill your silo—and do all belt work on the average farm. In fact, it will do anything you can do with horses; do it quicker; easier; and with less hired help. It weighs only 2,800 lbs., but all its weight being on its two wheels—*all its weight is traction weight.* The tool you hitch it to, forms the rear wheels and you do not have to pull around a ton of needless weight. It will back up with tools attached easier than a team will back. You can turn around in a small space; get close to the rows and the fences. It is the ideal tractor for the farmer because it costs less than four horses; is as powerful as five horses; does more work than seven horses; is inexpensive to operate; and eats only when it works.

Write for our new Tractor Catalog and read how farmers everywhere are solving the power and hired help problems on their farms; how they are changing the drudgery of farming to a profitable pursuit. Learn how you can make your work easier and get it done on time and grow bigger, better crops. Write today.

The Moline Line includes: Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows (Chilled and Steel), Reapers, Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons. **Also Stephens Six Automobiles.**



[5]

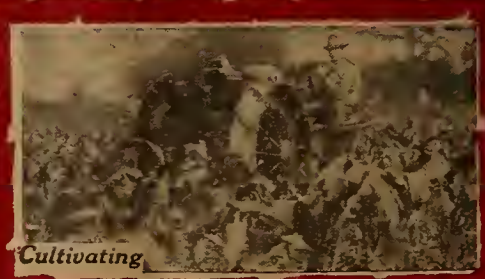
Be Sure to Visit Our Special Display at the Fremont, Nebraska, Tractor Demonstration—August 6th to 10th.

MOLINE PLOW CO., Dept. 60 Moline, Illinois

Disking

Drilling

Plowing


Cultivating

Harvesting

W

More Than 600,000 Copies Each Issue

LIBRARY
RECEIVED
JUL 30 1917
U. S. Department of Agriculture.

FARM and FIRESIDE

The National Farm Paper - Twice a Month

ESTABLISHED 1877

5 cents a copy

Saturday, August 4, 1917

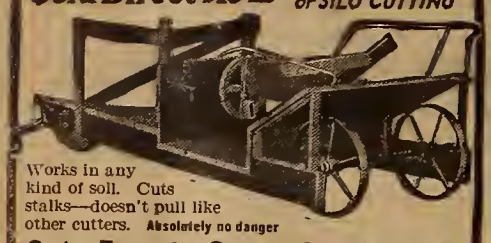
Eastern Edition

PHOTOGRAPH BY JOHN KABEL

Circus Day

The PERFECT CORN HARVESTER

Sold Direct $19.50 JUST the THING for SHOCK or SILO CUTTING



Works in any kind of soil. Cuts stalks—doesn't pull like other cutters. Absolutely no danger

Cuts Four to Seven Acres a Day

with one man and one horse. Here is what one farmer says: Willow Brook Farm, Dunnellen, N. J., Feb. 20, 1915. Gentlemen: I have found the harvester to do all it was claimed. My corn was heavy and I cut 8 acres in 2 days' time. I think it ideal to harvest corn for the silo. Sidney E. Williams.

SOLD DIRECT TO THE FARMER

Send for booklet and circulars telling all about this labor-saving machine; also containing testimonials of many users. Send for this circular matter today.

LOVE MANUFACTURING COMPANY
Dept. 16 Lincoln, Illinois

RAT CORN Kills Rats & Mice

MINERAL HEAVE COMPOUND In use over 50 years

CURES HEAVES

Booklet Free

$3 Package guaranteed to give satisfaction or money back. $1 Package sufficient for ordinary cases.

MINERAL HEAVE REMEDY CO., 425 Fourth Ave., Pittsburgh, Pa.

Don't Cut Out A SHOE BOIL, CAPPED HOCK OR BURSITIS FOR

ABSORBINE TRADE MARK REG. U.S. PAT. OFF.

will reduce them and leave no blemishes. Stops lameness promptly. Does not blister or remove the hair, and horse can be worked. $2 a bottle delivered.

Book 6 M free

W. F. YOUNG, P. D. F., 23 Temple St., Springfield, Mass.

SELF-OILING WINDMILL With INCLOSED MOTOR Keeping OUT DUST and RAIN — Keeping IN OIL

SPLASH OILING SYSTEM

Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear

OIL SUPPLY REPLENISHED ONLY ONCE A YEAR

DOUBLE GEARS — Each Carrying Half the Load

Every feature desirable in a windmill in the AUTO-OILED AERMOTOR

Gasoline Engines — Pumps — Tanks

Water Supply Goods — Steel Frame Saws

WRITE AERMOTOR CO. 2500 12TH ST., CHICAGO

WITTE Kero-Oil ENGINES

Immediate Shipment

2, 3, 4, 6, 8, 12, 16 and 22 H-P.—Direct from the Largest Exclusive Engine Factory in the world, selling by mail. Nothing but engines. Quick Service—Big Saving—90 Day Trial, 5-Year Guarantee. Fuel cost one-half less using kerosene. Write for new book (copyrighted) "How To Judge Engines", printed in colors and fully illustrated, showing how I can save you $15 to $200—sell you on practically your own terms—Cash, Payments or No Money Down.—Ed. H. Witte.

WITTE ENGINE WORKS
2065 Oakland Ave., Kansas City, Mo.
2065 Empire Bldg., Pittsburgh, Pa.

BUCKSKIN TIRES SAVE YOU MONEY

Thousands of car owners know this to be a fact. The reason is obvious—we sell direct from factory to you—saving you fully 30%. Moreover, Buckskin quality is of the highest. With every tire you get a 4000-Mile Guarantee

Send for free illustrated booklet and price list. Order a trial tire and if it doesn't live up to our guarantee, we will give you credit in full for the unexpired mileage.

THE L. AND M. RUBBER CO.
Wood St. Carrollton, O.
Western Distributing Office 15
1436 South Michigan Ave., Chicago

2¢ REPAIRS Ordinary Puncture

Tire-Doh also repairs big inner tube tears, torn-out valve stems and jobs impossible otherwise. Simple, safe, sane. No tools—no heat—no burning.

TIRE-DOH

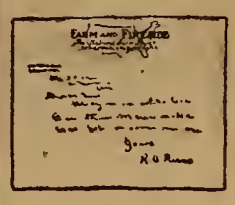
For Tubes For Casings

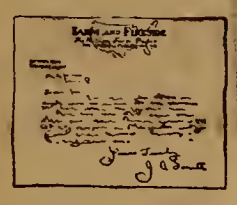
Also plug up casing cuts, holes and sand blisters regularly with Tire-Doh. Double mileage. Repair boots or any rubber goods. Seven years on market—nearly million users. Complete outfits 50c and $1.00. Order direct if dealer doesn't handle. *Made and guaranteed by*

ATLAS AUTO SUPPLY CO.
Permanent Repairs 695 W. Austin Ave. Chicago, Ill.

The Editor's Letter

Human Appetite an Expensive Dictator





UNDER the caption "Plot to Poison American Crew," a recent press account describes with what devilish ingenuity an interned enemy ship can be made dangerous to anyone attempting to use it. This dispatch states that the fresh-water tanks of the German liner Prinz Waldemar, interned in Honolulu harbor, were lined with a deadly poison which would dissolve in the water when the tanks were filled and cause the death of all who drank it. The poison was of a composition hitherto unknown to the American authorities. The ship's bilges were filled with cement, the electrical equipment was destroyed, and the boilers were made worthless by firing them after they had been drained of the water.

Germans, as a people, are not as resourceful or as original in thought as Americans, but they use their knowledge of every branch of science to a remarkably efficient degree, which largely accounts for the difficulty in crushing the Prussian war machine. This war is a combination of all sciences, each used for a variety of purposes. The manufacture of explosives, for instance, is based on chemistry, as are also the preparation of poison gases and the allotment of food to the troops. The German Government some years ago appropriated generous sums of money for carrying out experiments to formulate dietaries, the purpose being to determine what combinations of food would best support human life at least expense and under different degrees of bodily activity.

A thorough knowledge of food values and of medicines has enabled the Central Powers to preserve the health of the inhabitants and of the army, whereas an equal population of less scientific people surrounded by an "iron ring" would long ago have succumbed to pestilence and famine.

Here in the United States Professor Atwater has done some excellent work in analyzing foods, and in studying the ways the body uses food. But as a nation we have paid little attention to these studies, and what few thoughts we have are likely to be hostile. Prosperous people do not as a rule favor new developments which may interfere with the pleasure of three square meals a day, made up of good things to which they have become accustomed. Some men who have endeavored to help people choose their food more wisely have been looked upon as cranks. Others who know the resistance of the human mind to anything new have gone at the matter gradually, "jollying" the public along. By tact combined with scientific ability they have done a great deal of good, which is now beginning to be appreciated, though the progress is slow.

AN interesting comment on the matter of food has just reached my desk from Mr. C. A. Martin, an Indiana subscriber, whose imagination is extremely vivid. And because he is inclined to be a dreamer and his writings entirely free from the "let me give you some advice" attitude, I think you will find them refreshing. "Being left alone last night," he begins, "my mind got to wandering around over this wide world, and finally settled down on the human appetite. I am somewhat like the women. I have got to unload on somebody, and you are my victim. I wonder how many farmers ever stop to consider what they must produce to satisfy the human appetite. We boast of our cattle and our hogs and of the mighty fields of grain. The world has a perpetual harvest-home revel. The fruits thereof in wagon, car, and ship are rolling in from millions of harvest fields toward the open mouths of men and women who are gathered now on the face of the earth in great swarms. The activities of the earth are directed toward feeding and clothing this tremendous flow of people. For them the watermelon loads itself with succulence. The cattle on a thousand hills are making roasts for man. Swine, sheep, poultry, 'possum, deer, bear, and all edible animals of the earth are marching, bawling, bleating, squawking, and howling to a gastronomic tomb. The highest ambition any created thing under man can have is to be good fodder for the stomach of the human family, which is a Death Valley to billions of tons of all kinds of things. "Man has a higher ambition as he browses along on the riches of creation. It is possible to be cheerful, happy, and full of gladness and so become an inspiration to all people who touch the flame of your life. I worked in the city for thirty years, and am now broken in health, with a great big appetite. But with the help and advice I receive through the columns of FARM AND FIRESIDE I am able to satisfy my own appetite and produce a nice surplus for others from a little 30-acre farm among the clay hills on the banks of the Wabash.

"Now, Mr. Editor, if you will correct this or write on the subject more fully, it might help more than one needy family to be economical."

THE ideas you have read, though fanciful, are not extreme compared with writings which have been given a place in literature. "I regard the discovery of a dish," said Hourion de Penessy, a noted French judge, "a far more interesting event than the discovery of a star, for we have already stars enough, but we can never have too many dishes."

But in just what way is a knowledge of foods useful? Is there actually a practical side to the science of nutrition? And how can the average family get the desired information? These are natural questions which suggest themselves to the open-minded reader. Yes, the study of foods has an extremely practical side.

The person who knows that green sweet corn has practically the same food value and composition as potatoes is not going to demand both at the same meal. He will be willing to have one less dish on the table, which means less work in preparing the meal. Furthermore, the potatoes will keep for winter while sweet corn on the cob will not.

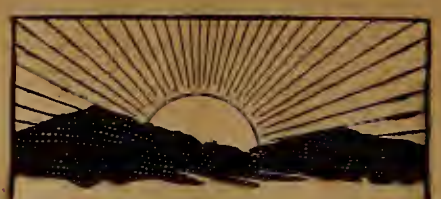
The sensible owner of a delicate stomach who realizes that green lima beans are about three times as hearty a food as green string beans will accordingly regulate the amount of the former consumed at a meal, regardless of how good they taste. If we know that a grown fowl is about a fifth more nourishing than spring chicken, perhaps some of us who fear high meat prices next winter will forgo the luxury of young fries and let them grow up.

Dr. Atwater, in his experiments, has found that the appetite and digestion are strongly influenced by the surroundings of the meal. Cheap articles, even left-overs, tastefully served may be better food than expensive ones less competently handled. And if you wish your digestive system to extract the greatest amount of nourishment from what you eat, manage to keep in good humor. Arguing and faultfinding at the table interfere with digestive secretions just as abuse makes a cow hold up her milk. So you get little good from a meal that is eaten under the influence of a bad temper. Read this sentence aloud to the family. Domestic science, which includes the selection and preparation of foods, is slowly gaining recognition, and I wish every farmer's daughter could take at least a short course in it, just to get her mind started along the right channels of thinking.

The food value of every human, as well as live-stock feed, has been determined, and this information is accessible in most any library. Our own FARM AND FIRESIDE library is very complete, and questions relating to foods will be cheerfully answered.

A knowledge of foods enables substitutes to be used in place of the customary high-priced articles without seriously affecting the nourishment derived, and if the cheaper foods are carefully prepared and well seasoned they will be appetizing. I think we will eat the substitutes with better grace if we know definitely that they are a real and nourishing food, and that their use in moderate quantity will mean a substantial financial saving; for the human appetite is an expensive dictator.

The Editor



A Perfect Day

should end — as well as begin — with a perfect food, say—

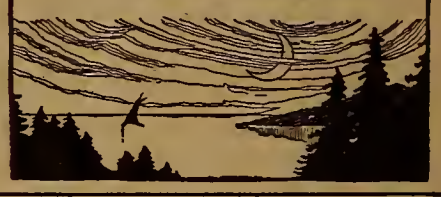
Grape-Nuts

with cream.

A crisp, delicious food, containing the entire nutriment of whole wheat and barley, including the vital mineral elements, so richly provided by Nature in these grains.

Every table should have its daily ration of Grape-Nuts.

"There's a Reason"



Who Wants A Bicycle?

I have one for any boy or girl who is willing to do a little easy work in spare time. You can positively earn a bicycle easily and quickly.

Models for girls or boys of all ages.

Pneumatic tires, sturdy construction, coaster brake.

Parents, if you would like your boy or girl to have a thoroughly reliable, high-grade bicycle, here is an opportunity you must not miss. The bicycle will be given absolutely free of cost. This is not a contest. You will be told exactly what is necessary in the first letter our club secretary sends you. Isn't it worth investigating?

Address

Secretary "The Bicycle Club"
FARM AND FIRESIDE, Springfield, O.

A 32-Page War Atlas

For a few minutes' work

We have just received a splendid Atlas of War. It contains the only map of the Western Battle Front which enables the reader to get a mental picture of the immense battlefield.

It shows the territory gained by the Allies since the beginning of the great drive.

We will make you a present of one of these splendid Atlases, if you send us two six-month subscriptions to FARM AND FIRESIDE, at the special price of 25c each. Send us two subscriptions now, to

FARM AND FIRESIDE, Springfield, O.

FARM and FIRESIDE

Published Twice a Month by THE CROWELL PUBLISHING COMPANY, Springfield, Ohio

Copyright 1917 by The Crowell Publishing Company

Vol. 40 Springfield, Ohio, Saturday, August 4, 1917 No. 21

Canada Leads Us Marketing

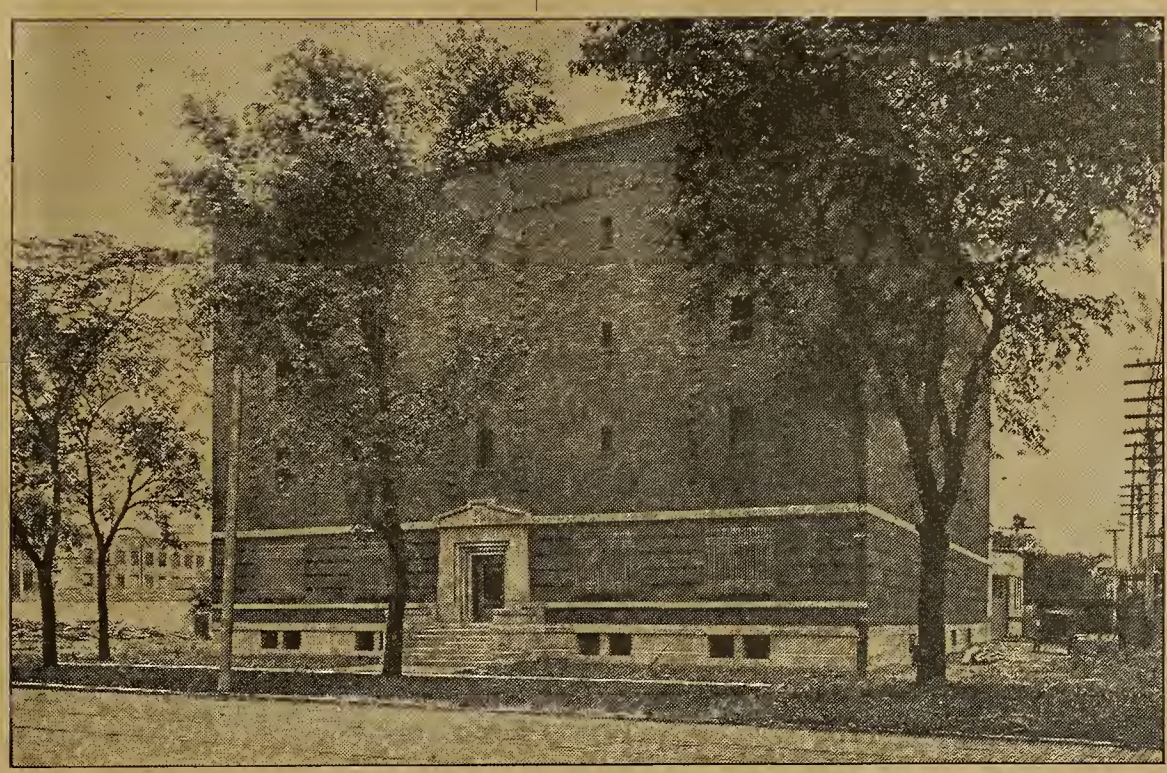
How Farm Cold Storage Helps Feed Our Northern Neighbors

By ROBERT ROBINSON

AN INTIMATE first-hand acquaintance with the storage, distribution, and marketing of farm products in Canada has effected a big change in my views in regard to this branch of the farming business. Just now, when war activities are constantly boosting prices on everything the consumer uses, there is urgent need for the farmers of this country to follow up every lead that promises to help in better and more economical distribution of our farm products. Since returning to the "States" I have felt it a duty to give my observations while in Canada, for the benefit of my countrymen.

For a country acknowledged to be the peer of all others in the production of the most important staple products, our own loved land is lacking lamentably in providing suitable and progressive means of storing, distributing, and marketing our great and rich production to best advantage. True, our Federal Department of Agriculture has begun to develop a department to help work out some systematic aid to marketing. Nevertheless, the fact is plain that we are still far, far behind other countries in this important help to farming success. Since making a close study of the system of government-encouraged farm cold storage among the farmers of Canada, I am convinced that our own Government should assist us to secure this aid to better marketing in the same way.

Private capital in enormous amount during recent years was quick to see this need of storage, and provided it in cities so as to take advantage of the necessity of the producer and distributor.



This is a representative type of co-operative country cold-storage building now operating in Canada. They are substantial, well constructed, and a credit to any farm community

Plan Eliminates Much Speculation

THIS plan enables those in control of the city storage plants and large dealers to speculate and interfere with the natural workings of the law of supply and demand. But farm cold storage would be much less concentrated, and the continued production, and constantly recurring need of storage for maturing crops and animal products would ensure against danger of interference with distribution. Another big factor of economy would be the lower cost of storage plants where the site, building material, labor, and operating expenses would be less costly.

For all kinds of more perishable farm products, such as fruit, meat, eggs, and others easily damaged by warm weather and by freezing, suitable country storage would allow practically all perishable products of marketable quality to be delivered to retailers and consumers in good condition and with the least possible loss by spoilage and waste. For example, the fruit grower under our present marketing conditions, whether he has 500 or 5,000 packages of fruit, must sell when his fruit is matured to the shipping stage, no matter how glutted the market at that time may be. As a result, it frequently happens that fully as much good fruit decays in orchards or goes for hog feed as finds its way to market. With suitable cold storage located at the most convenient farm shipping point, the products would steadily go forward to retailers and other local distributors just as demand required, and thus prevent the present system of massing great stocks of produce in the large centers of population and then reshipping much of the stored produce unnecessarily back and forth, with ever-enhancing cost to the consumer, while the repeated commission, storage, drayage, and handling charges are multiplied.

The city consumer continues to lay the charge of present excessive cost of produce at the door of the farmer. But when the retail selling price is analyzed it can be shown that in most cases the farmer is now getting a smaller proportion of the increased cost of commodities than is being absorbed by the long line of distributors through whose hands farm products pass. This system of enhancing cost to the consumer has become established in every line of distribution by making use of unnecessary dealers and handlers extending all the way from the farm to the consumer's kitchen.

Our country's nearest and most progressive neighbor, Canada, has left Uncle Sam behind and out of sight in the matter of encouraging more economical and satisfactory marketing of farm products. Canada in climate, soil, and production is very similar to that of a large area of our own country, and her population is about one twelfth of ours. But the Government of Canada long ago recognized the fact that she had a duty to her people to perform in the matter of assisting in the marketing of food products and other farm supplies so as to benefit all her people by so doing. When this governmental plan of assisting in the distribution of farm products was considered by Canada, it was understood that proper and convenient storage and preservation of food products were just as essential as more economic marketing, and, in fact, storage was considered a part of the marketing operation. It was also understood that any assistance given in that direction would encourage better and more productive farming, and thus secure a steady and certain supply of high-quality food for the entire population and for export. The Canadian Government furnishes this aid and encouragement in marketing and storage principally in the form of subsidies. The plan followed is this: Farmers in any community or province agree on a location for a cold-storage warehouse. Then the capital is raised by forming a joint stock company among those interested, or by any other co-operative plan decided on. Sometimes an individual or private company furnishes the capital, but, in any case, an association of farmers must control the management.

Government Pays for Part of Plant

THE encouragement by the Government is furnished by assuming part of the cost of the storage plant after the definite required conditions are met by the association. For example, the St. Thomas Cold Storage Company, located at St. Thomas, Ontario, cost $123,700. Of this the Canadian Government paid 30 per cent, or $37,110, leaving only $86,590 for the company to raise. The capacity of this plant is 174,141 cubic feet. The storage plant of Scott & Hogg, Cedarsboro, Ontario, with a capacity of 90,000 cubic feet, cost $14,500. Of this the Government paid $4,350.

In refrigerating quality and labor-saving aids these country storage buildings are equal to the best modern city plants

These plants are now to be found quite widely distributed over Canada, and are all operated on a basis of storage charges to cover cost of investment, maintenance, and running expenses only. From the latest figures I have at hand I find that Ontario has fourteen of these storage plants, Nova Scotia four, Saskatchewan four, British Columbia three, Alberta three, Quebec three, New Brunswick two, and Prince Edward Island one. Besides paying 30 per cent of the total cost of these plants, the Canadian Government pays a bonus of $100 to every creamery in which a small cooling plant is installed according to government recommendations for insuring the keeping of creamery products in first-class condition. My last information in regard to these creameries shows that 850 had installed this cooling system and had received the $100 bonus each.

These co-operative farm storage plants have not put city private storage plants out of business, but the influence of the subsidized plants is to prevent injurious speculation and control of perishable foodstuffs. Here are some of the benefits Canadian farmers are receiving from their system of storage: Producers are able to place their fruit, butter, meat, eggs, cheese, etc., in cold storage before any deterioration occurs. When in storage the expense is at the minimum rate, shipments can be made in iced car lots when prices are attractive, with full assurance that their products will arrive at destination in perfect condition. The prejudice that formerly existed against cold-storage products is being overcome, for now the time produce is held in storage is under control of the farmers, and they can guarantee good conditions, whereas when held in private storage too long [CONTINUED ON PAGE 15]

E-W

Safety From Lightning

Heed These Natural Laws and You'll Never be Struck

By GEORGE A. RUSS

LIGHTNING is not an accident or a freak of nature, as many suppose. It never operates by chance. There are well-defined reasons for its actions or behavior, and a brief outline of the laws of electrical phenomenon in the atmosphere will be of considerable value to persons who spend much of their time in the open.

People, as a rule, regard lightning as electricity. This is, indeed, a mistaken conception, for lightning is not electricity, but only the path over which the electricity discharges. The flash of light accompanying an atmospheric electrical discharge is caused solely by the resistance offered the discharge by the atmosphere. This resistance is so great that the electrical path in the sky is rendered white-hot by the friction set up, producing the flash of light known as lightning.

Electricity makes no fire, causes no disturbance or violence unless resisted in its course. If the air did not resist the electricity there would be no lightning.

But before any lightning is seen Nature first gets ready certain necessary conditions. These conditions are very simple and easily understood. In nature two kinds of electrification exist—namely, positive and negative. When a body is electrified in the same manner as another body, those bodies repel one another; while bodies, one electrified positively the other negatively, attract one another.

The electrical forces in the clouds are different from the electrical forces of the earth, so these two opposite electrical forces are attracted by one another. But in order that an electrical charge may reach the earth from the thunder clouds, a medium of transit must be established. The only medium to be used in this connection is the atmosphere, and as the atmosphere is a very poor conductor of electricity it is not capable of transmitting these electrical currents in the volume with which they are discharged, and, as stated before, a friction is set up causing lightning.

What caused electricity to accumulate in the clouds cannot be stated positively, but the most recent and plausible theory is that put forth by Dr. George C. Simpson. Doctor Simpson's theory is that every time a drop of rain water breaks, a separation of electricity results. A positive charge is received by the water and a negative charge by the air. Cloud particles rapidly absorb the charge which passes to the air, and in time the cloud becomes highly charged with negative electricity.

Lightning, strictly speaking, is not electricity, but is only the path over which electricity discharges. The flash is caused by the resistance of the atmosphere

Protect Stock in Pastures

THE electricity thus stored strives to discharge to the earth, and would do so if it were not restrained from so doing by the poor conveying qualities of the atmospheric path over which it must travel. Therefore the electricity in the cloud is augmented by additional units concentrating there, forming a heavier charge.

The charge pent up in the cloud becomes greater and greater, and the straining and pulling continues with ever-increasing intensity. At last the charge in the cloud becomes so great that the atmosphere can resist the strain no longer. This, then, is the condition which Nature gets ready before any lightning is seen.

It is well to bear in mind these conditions, as they will be of much service to those persons who would protect themselves from the ravages of lightning. Some objects lightning never strikes; other objects it strikes quite frequently. There are well-defined reasons for this.

A frame house unprotected by lightning rods is in great danger during an electrical storm. In fact, anything of wood is more likely to be struck than objects of metal. Wood being a poor conductor of electricity acts much the same as does the atmosphere, causing a vast increase in the expenditure of energy on the part of the electrical discharge. This resistance offered by objects of wood is so great that those objects are very often shattered by the electricity in its effort to reach the earth.

This principle of resistance is also found, and generally observed, in the case of a person struck by lightning—namely, that the shoes are, as a rule, torn from the feet and badly wrecked. The electrical discharge in its efforts to reach the earth through the medium of the human body encounters great resistance in the leather of which the shoes are made and, as a consequence, tears them to shreds.

The timbers in a house act much in the same manner as do the shoes before mentioned. If wood were a good conductor of electricity a frame dwelling would never be struck by lightning. As a rule, there are metal objects about the house which offer less resistance to the electrical discharge than the timbers, and the discharge uses them as a medium of transit. Quite often this medium is the stove. But the stove doesn't fly to pieces like the timbers. In most instances the floor near the stove is ripped and splintered—another illustration of electrical resistance. The stove resting on the floor is not in metallic connection with the earth and cannot receive and discharge the volume of electricity. The screen door and water pipes act the same way unless in metallic union with the earth.

Another illustration along the same line is that of wire fence. As a rule, wire fences are strung on wooden posts, therefore, like the stove, they fail to be in metallic connection with the earth and, like the stove, cannot receive and discharge the stored electricity. Animal life is a better conductor of electricity than are the wooden posts. Consequently animals close to the fence become the means of connecting the fence to the earth electrically. But if a ground wire is put on every sixth post no animals would be killed, as the wire would carry the electricity to the earth better than could the animal.

As previously stated, metals of all kinds are excellent conductors of electricity, and all things made of metal are practically lightning-proof. Take for instance a railroad train or locomotive. Lightning will not strike a train, for it never gets heavily charged with electricity. The metal of the train is a good conductor, and when the cloud attempts to charge it with electricity the entire electric force goes up the metal to the highest point, and trickles off a little at a time in a silent, continuous discharge, never allowing enough to accumulate to cause any trouble.

The silent discharge is readily seen in the dark, and nearly all locomotive engineers have seen it during thunder storms in the night. If this discharge were interrupted, lightning would play havoc with the train. If trains were run on wooden instead of steel rails, a metallic disconnection from the earth would result, which, interrupting the silent electrical discharge, would make a train a very dangerous mode of travel during a thunder storm.

It is a fact that the business section of a city is seldom struck by lightning. Tall skyscrapers are never struck if their roofs and pillars are constructed of metal which extends to the earth.

Naturally you are wondering what are the safest places about your home during a thunder storm. Of all places, that near a stove is undoubtedly the most dangerous. If the stovepipe is tall the stove is exceptionally dangerous, as the pipe will offer the path of least resistance to the electric current which will enter the pipe and discharge itself through that part of the house. If, however, the stovepipe is short, other places may be more dangerous, such as near water pipes, screen doors, chimneys, fireplaces, or perhaps where the water pipe enters the cistern. If your house has a wing, look out for the tin valleys in the angles of the roof. If the screen door is beneath a tin valley, it is indeed a very dangerous place to stand.

A great many people are of the opinion that it is unsafe to have doors or windows open during a thunder storm. But contrary to this belief, it makes no difference whether they are open or not, as the electricity will strike a house whether there is a circulation of air through it or not.

You may be surprised to know that lying on your iron or brass bed is the very safest place in all the house, but nevertheless it is true. To stand by an iron bed is very dangerous, but lying on it is safe, as the electricity is sure to pick out the path of least resistance, which in this instance would be the metallic bed, and not your body. The walls above the bed and the floor below may be ripped and splintered, but no serious harm will befall you while you remain in your bed.

Explaining the Feather-Tick Belief

AN OLD idea still exists that lying on a feather tick will protect one from lightning, but it is well to remember that a feather tick in itself offers no protection unless it lies on a steel bed spring, as then the electric current will go through the spring. If the feather tick is not on steel springs the electric current is likely to go through your body instead of the tick, as feathers are not nearly as good a conductor of electricity as is your body.

During a thunder storm many persons seek shelter under trees. This proceeding is unwise when one gives consideration to the number of people who are killed by lightning under such conditions. Still, it is much safer to seek shelter under a tree than to remain isolated in the open.

An isolated tree, occupying an exposed position, is much more likely to be struck than the average tree in the midst of a wood. To take shelter under an oak tree is more dangerous than would be the case under any other species, as it is more likely to be struck than is any other tree, while the beech tree runs the least risk. The kind of soil the tree is growing in and its proximity to water have a decided bearing on its likelihood of being struck by lightning.

Most people are afraid of lightning, and this is a very sensible fear, for casualty experts have gathered figures showing that on an average eight hundred persons are killed and two thousand others injured by lightning in the United States annually. Most of these deaths and injuries could have been avoided if the victims had thoroughly understood the phenomenon of lightning and taken greater care in selecting a safe place during thunder storms.

There are various different forms of lightning, such as sheet lightning, bolt lightning, and chain lightning, but they are simply different manifestations of electrical energy and take their form from the nature of the conducting medium and the intensity of the discharge.

Sheet lightning, it is thought, occurs between clouds, whereas the other forms of lightning are usually discharges between earth and clouds.

There are well-defined reasons for the frequency with which lightning strikes certain objects

EW

Sheep on Corn-Belt Farms

Old Ewes, Well Selected, Produce Lambs at Smallest Outlay

By J. A. RICKART

High prices for mutton and wool have brought about a revival of the sheep industry. Most of the discouragements which caused many raisers to drop out of the business have been overcome by good management and a more complete control of sheep ailments

MEN who handle sheep on farms in "native territory," as distinguished from the range country, are practically unanimous in admitting that there is an advantage to a farm in keeping sheep, and that there is a profit that comes directly from the flock. Yet a good many have dropped out of the habit of handling sheep, having become discouraged from losses from dogs, or from diseases among their sheep, or losses at lambing time.

Concerning losses at lambing time, an Oklahoma farmer who has been raising sheep for twenty years, and who considers them about his best property, told me that the most important time of the whole year in caring for the sheep is during lambing time.

"What percentage of lambs do you usually get?" I asked him.

"Generally 100 per cent," he said.

"How do you manage to do that when the average is probably not more than 80 per cent?"

"I don't have any special method, except to stay right with the flock during the lambing time. I get out my lantern and prepare to stay with them nights as well as days."

"You find that necessary?"

"It pays to do it. On a farm the flock is usually kept in comparatively close quarters. When a lamb is dropped, Nature provides that the mother become acquainted with her offspring immediately. If a ewe drops twins, sometimes one of the lambs will straggle away and get lost among the other sheep before the ewe has a chance to 'mother' it, and when that happens the ewe will not own it afterward.

"Sometimes when the ewe drops a single lamb it strays away among the other sheep. When I am there I try to see to it that none of the lambs wander away and get lost before the ewe has a chance to mother them, and if one does happen to be disowned I take proper care of it at once, and usually save it.

"Now on the ranges," he went on, "where the flock is scattered out more, this difficulty is done away with, because there is little chance for the lamb to stray away and become lost among the other sheep."

Losses from sheep-killing dogs are hardest to bear. Few States have adequate dog laws, and where such laws are lacking a dog can destroy a season's profit in a single night without recourse to the owner, particularly when values are as high as they are now. Some States have a dog tax which goes into a fund from which owners are paid for losses from this source, on proper proof. In States where there is no recompense, owners have managed to improvise considerable protection from dogs. Plenty of bells in a flock will scare away the less bold dogs. A Clay County, Missouri, owner, among many others perhaps, corrals his sheep every night.

"I hate to do it," he said, "for it makes the sheep cough a lot from the dust, and it keeps them from the early morning grazing."

However, sheep welcome the protection of a corral and come to it regularly every night.

With respect to disease, usually of the stomach, the Missouri owner referred to above raises a little patch of tobacco every year, and mixes the powdered leaves with the salt once a month. He says this keeps his ewes free from stomach worms. He also changes their pasture often, having three small pastures in which he runs his sheep, horses, and cattle.

Missouri and Kansas farmers are getting into the habit of handling a drove of Western ewes every season, and closing them out at the end of the summer. Every fall, owners on the Western ranges cull out their old ewes and send them to market, replacing them with ewe lambs. In this way they keep their herd up to its maximum breeding capacity.

Of the discarded ewes sent to market about one half are able to raise one more lamb. Commission buyers can pick these ewes over and get a drove practically every one of which will raise a lamb the following season. Usually these old ewes can be bought for $2 or $3 a head less than young breeding ewes. A farmer at Jameson, Missouri, kept back his ewe lambs last season from a drove of Western ewes bought the previous fall. He thus related his experience with this drove of ewes after he sold them:

"I have been handling and raising sheep many years, but the band of old Utah ewes I bought in Kansas City in September, 1915, broke all my former records for profit. There were 120 of these ewes, which cost me $5.80 a head. I lost five of them after taking them out, leaving 115 head, which raised 116 lambs.

"To my great surprise these ewes sheared nine pounds of wool, which brought an average of $2.40 a head, and that more than paid for wintering them. About half the lambs were ewes, which I held back for breeding purposes, as the old ewes were thin and unfit for further service. The wether lambs that I sold brought a total of $380. The amount received for the wool was $276. The ewes brought $314, making the total amount received from wool, lambs, and old ewes $970. Deducting the original cost of the ewes from this I had $274 and 50 ewe lambs left."

World Needs Wool

By E. L. VINCENT

IN ALL the past history of this country, sheep have been the best friends of the farmer; and now when we are in a day of stress they are coming back to do their "bit." More sheep are to be seen on the farms of the East than for a long time; and, while individual farmers are seeing the need of sheep and coming to the front to meet that need, in many places there is a united effort to the same end. Organizations are being formed for the development of the sheep industry, and sheep are being shipped in by the carload for distribution at nominal prices to those who are inclined to invest in them.

It seems good to an old sheepman to see this sweep of the pendulum back toward these creatures of the "golden hoof." For a good many years our pastures have been so bare of sheep! Men who used to keep them have gone out of the business for one reason and another, so that only here and there have we seen any of these farm friends.

The changes that are taking place on the big ranches of the West show that we cannot depend any longer on that section for our supplies of mutton and wool. The land is being cut up into farms for other purposes, and all the time hungry folks are asking for lamb and mutton to eat, while the mills are fairly crying for the wool that is needed to clothe the world. Food and clothing we must have.

But is this all a matter of sentiment? Because it is patriotic to do our part, is that the only reason why we should keep sheep? Find your answer in the market column of the daily paper. See what wool is bringing. Go to the shop and see what you will have to pay for a piece of sheep meat. And no matter what may be the outcome of the present international disturbance, it will be many years before either wool or meat will drop back to the old-time prices. I doubt if that ever will be the case.

Then, can there be any doubt that it would be a very profitable thing for the farmers of particular communities to join their forces and bring in sheep to be sold to those who are so situated that they could care for them properly? But such an organization would do well to keep together after the sheep have been brought in. There would be much for them to do in the way of procuring a market for wool and meat.

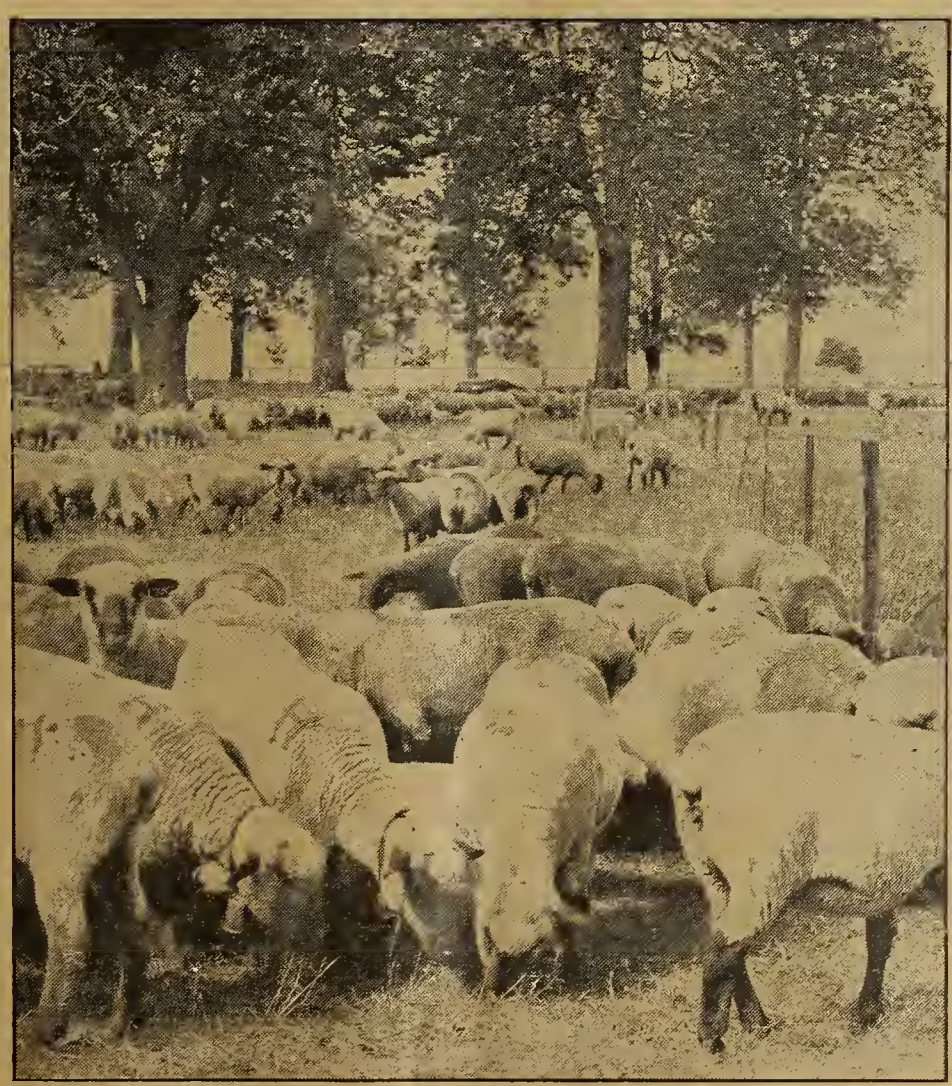
It is a fact that cannot be doubted that a little union of producers can do better than can the individual farmer in disposing of his sheep products. One man might go into a town with wool or meat and find himself at the mercy of the buyer in many a town of this country. He might have to take a price far below what his meat and wool were worth; but a unity of effort, with careful men at the head of it to look up markets, would be the means of securing far better prices for all.

A good deal of care would be needed in buying sheep for such an undertaking. The work should be done by someone who can tell whether he is getting stock that is free from disease. This an inexperienced man might not be able to do, but it is always possible to get in touch with those who are posted and can be trusted to do the right thing. So far as possible, good, young, well-bred sheep should be brought in for distribution. Otherwise there might come an early disappointment that would dishearten all.

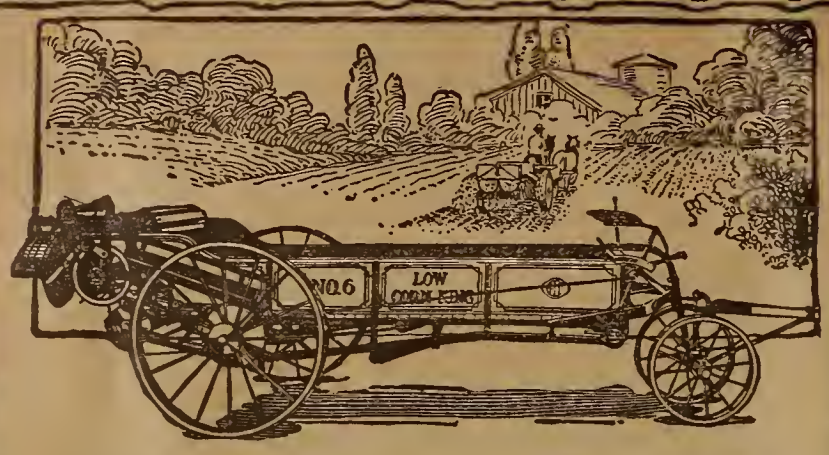
The question of dogs needs to be dealt with everywhere. Local conditions must govern the method adopted for safeguarding sheep. Some States do it by a high tax on dogs. Others add to this reimbursement for damage incurred. But where all are interested for the common good it is always possible to develop a plan that will save the sheep, and the good dogs too.

By some means we must bring back the sheep industry of this country. Conditions are getting serious, and every farmer may well give it the best thought of which he is capable.

This year the world needs wool especially, and the future promises satisfactory prices for all sheep products. A good flock cannot be built up at a moment's notice, but by making a small beginning now we can gradually work into the business, at the same time adjusting our other farm operations to accommodate this new branch.



Consult the wool and mutton markets and then estimate how many hundred dollars even a modern flock like this is worth



Settle the Spreader Question

THE farmer who uses a **Low Cloverleaf, Low Corn King** or **Low 20th Century spreader** these days is the man who makes the most money. His land increases in value when regularly fertilized. His crops grow better in quality and larger in yield when supplied with available plant food. Of all the spreaders on the market, the **Low Cloverleaf, Low Corn King** and **Low 20th Century** come nearest to doing this work as it should be done.

It is a long jump from the ordinary machine to the modern low spreader with its double beater and wide spread. Every farmer who knows the value of good spreading is buying one of these wide spread machines. As a matter of fact, no farmer can afford to buy any other kind, because the saving of time and labor and the better job of spreading done by a **Low Cloverleaf, Low Corn King** or **Low 20th Century** makes them worth more than ordinary spreaders.

Complete information about these machines is worth money to you. Drop us a line at the address below and we will show you very plainly why it will pay you to buy a **Low Cloverleaf, Low Corn King** or **Low 20th Century** spreader.

International Harvester Company of America
(Incorporated)
CHICAGO U S A
Champion Deering McCormick Milwaukee Osborne Plano

SAVE-The-HORSE Will Cure It!

Big race horsemen and breeders know Save-The-Horse is a sure cure for SPAVIN—Ringbone—Thoropin or ANY Shoulder, Knee, Ankle, Hoof or Tendon Disease. Over 200,000 cases have been successfully treated. Sold with a Signed Contract-Bond to return money if remedy fails. No blistering or laying up of horse when you need him. Learn how to diagnose and treat cases. Send today for our FREE 96-page BOOK, sample contract and expert veterinary's advice. All FREE.

TROY CHEMICAL CO.
59 Commerce Ave., Binghamton, N. Y.
Druggists everywhere sell Save-The-Horse with CONTRACT or we send by Parcel Post or Express Paid.

CULVERTS

of every type—as well as Tanks, Silos, Roofing, Siding and all forms of exposed sheet metal work, give greatest service and resistance to rust, if made from

Apollo-Keystone COPPER STEEL GALVANIZED

Highest quality Galvanized Sheets manufactured. Actual time and weather tests have proved that these sheets last longest in actual service. Demand APOLLO-KEYSTONE in your Culverts, and accept no substitute. Look for the Keystone added below the Apollo trade-mark—it insures durability and lasting satisfaction. Sold by leading dealers. Every farmer and owner of buildings should have a copy of our booklet "Better Buildings," containing full information on formed metal Roofing Products, methods of application, etc.

AMERICAN SHEET AND TIN PLATE COMPANY, General Offices: Frick Building, Pittsburgh, Pa.

Overalls that last
that's the kind made of

Stifel's Indigo Cloth

Standard for over seventy-five years

For Men and

Miss Stifel Indigo

Kid Glove Finish Cloth

For Women

Remember, It's the CLOTH in your overalls that gives the wear—Stifel Indigo has a 75 year reputation as the longest wear, fast color garment cloth. Miss Stifel Indigo is of the same quality as her big brother—the best woman's overall cloth made. Look for the BOOT trade mark—it's your guarantee of the genuine.

REGISTERED

J. L. STIFEL & SONS
Indigo Dyers and Printers
WHEELING, W. VA.

New York...260-262 Church St.
Philadelphia...1033 Chestnut St.
Boston.....31 Bedford St.
Chicago...223 W. Jackson Blvd.
Baltimore.....Coca-Cola Bldg.
San Francisco Postal Telegraph Bldg.
St. Joseph, Mo. Saxton Bank Bldg.
St. Louis.....928 Victoria Bldg.
St. Paul.....238 Endicott Bldg.
Toronto.....14 Manchester Bldg.
Winnipeg...400 Hammond Bldg.
Montreal...Room 508 Read Bldg.
Vancouver..506 Mercantile Bldg.

The Weed War

The Way to Destroy "Plants Out of Place"

By ORIN CROOKER

MANY a man who would not think of letting his corn rows become choked with weeds, and who prides himself on doing a good clean job at cultivating, will let enough of plant pests go to seed along the edges of his fields and in out-of-the-way places about the farm to provide many noxious plants the next year.

Enough weed seeds blow in upon one's fields from every point of the compass, or secure a foothold in various ways, without need of permitting others to propagate directly under one's nose.

I have found only two practical methods of keeping weeds in check on the uncultivated portions of my farm. One is to keep sheep and give them access to such parts of the place as are not being used for growing crops. It is a hardy and fortunate weed which can survive where these animals are permitted to browse.

However, there are a few such which sheep will pass by, and this introduces us to the second means which must be employed, which is none other than a good sharp scythe backed up with plenty of muscle and patience. The latter is fully as essential as the cutting implement, for if one would get ahead of weeds in this way the operation must be repeated early and late through the entire growing season. With some of these pests, cutting doesn't do much good unless followed up at such short intervals by another cutting so that the leaf system of the plant has no chance for very extensive development.

Some weeds which have a liking for fence corners and other uncultivated spots live but one season. If cut before going to seed this is the end of them. Others live two years. If cut the first year they may or may not appear the second year, but cutting them the second year before they seed will finish them. It is weeds of the deep-rooted sort that live on year after year—like thistles—which need more than a single cutting during the growing season. With them the process must be repeated at short intervals and continued for two or three seasons.

A root which does not get a chance to develop a leaf system above ground will finally get discouraged. But to fight some of these deep-rooted pests successfully requires about as much will power as is needed to give up booze. Where it is possible to do so, a heavy mulch of rotted straw or discarded roofing paper, well weighted down and left undisturbed for two growing seasons, will do the work. But for plants scattered along the edges of cultivated fields this is not practical.

A cluttered-up farm is bound to be a weedy farm where sheep are not available to assist in the work of eradication. Where discarded implements are permitted to stand in the fence corners, and where other uncultivated spaces are occupied by material which discourages free use of a cutting tool, weeds usually grow undisturbed. The best remedy for such a condition, of course, is to clean up the place before sharpening the scythe. The late cutting of weeds along public highways seldom accomplishes any real good save to improve appearances. Many of the weeds have already gone to seed and the wind has scattered the sowings for next season's trouble.

A farmer whose land adjoins a railroad right of way often faces a difficult problem. Sometimes section crews do not go over the road until fall, when they cut and burn as they go. By this time it is too late, of course, to prevent spread of the seeds by the wind. Sometimes jungles of weeds as high as a man's head may be observed standing on railroad property in the open country. In such cases the farmer whose land adjoins can have little heart for trying to keep his own side of the fence cleaned up.

Unused farm machinery thus stored is sure of being "under cover" a part of each growing season anyway

Controlling Foul Brood

By Oscar Kazmeier

AMERICAN foul brood among bees is doing its greatest damage to the small beekeepers. The disease attacks the larvæ at capping time. The larvæ turn to a chocolate color, and as the decay proceeds the cells have a sunken appearance. The larvæ finally turn a brownish to almost black color, and in time will dry to a scale, adhering tightly to the cell walls. The characteristics of the disease are that it has a glue-pot odor, and that the diseased larvæ show a ropiness.

When you see a frame where the brood appears scattered—that is, a few cells here and there not hatched while the rest are—nine times out of ten the brood is diseased. When you see a cell where the larvæ do not appear healthy, insert a small twig or toothpick in the mass and notice in drawing it out whether it shows any tendency to stringing out. If it does you may be sure that foul brood is present.

As the seat of the disease lies in the honey of the diseased colony, it can be seen how easily it may spread, for a colony that is affected will become weaker and weaker and before long will no longer be able to defend its entrance. Thus in a time, when no nectar is coming in from the field, the other bees in the yard will be looking around for some sweets, and they will be very apt to attack these weak colonies, overpower them, and rob them of all their honey. This honey containing the diseased germs then is carried into the brood nests of other colonies, with the result that they too become diseased. It may also be spread at extracting time.

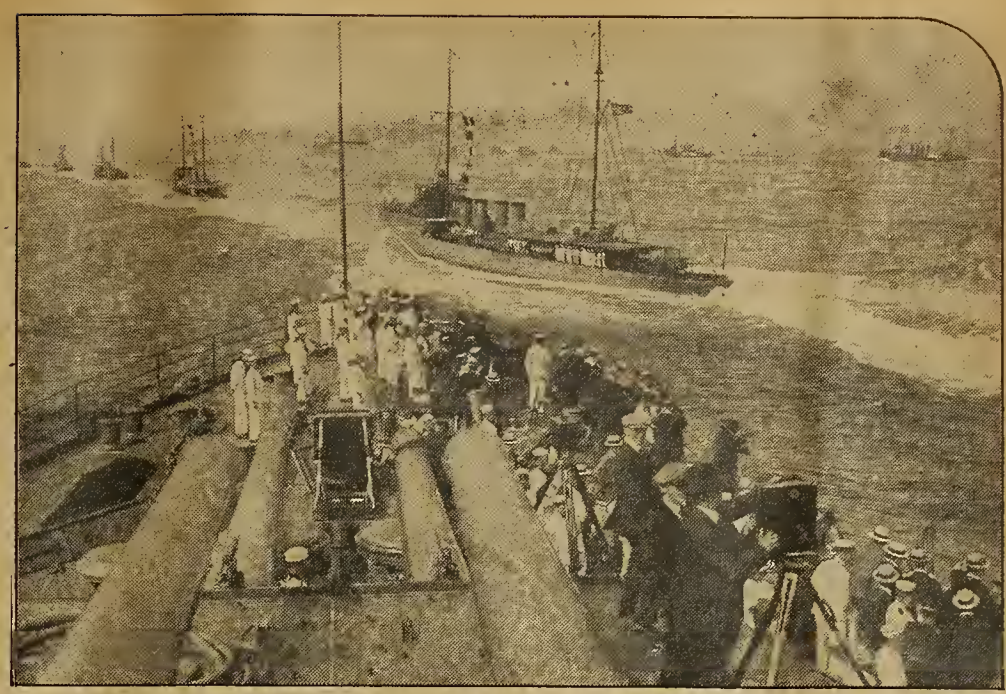
The treatment should be given while there is yet nectar coming in, to guard against robbing. Brush all bees into a clean hive, on new frames containing strips of foundation. It will be advisable to cage the queen for a couple of days in the hive to prevent the bees from deserting it. Within four or five days remove these frames again. Use extreme care not to drip any honey in or around the hive in the process.

Now, if the healthy brood of these diseased combs is to be saved, stack them up on other diseased colonies in the yard and leave them for about ten days to permit the healthy brood to hatch. Then render the combs into wax. If frames are to be used again, boil them thoroughly in water and burn out the insides of the hive bodies with a blow torch, which will kill germs that adhere to the sides of the hives.

If only one or two colonies in a yard are affected, the quickest and safest way is to burn the hive, bees and all.

Copyright by Underwood & Underwood, N. Y.

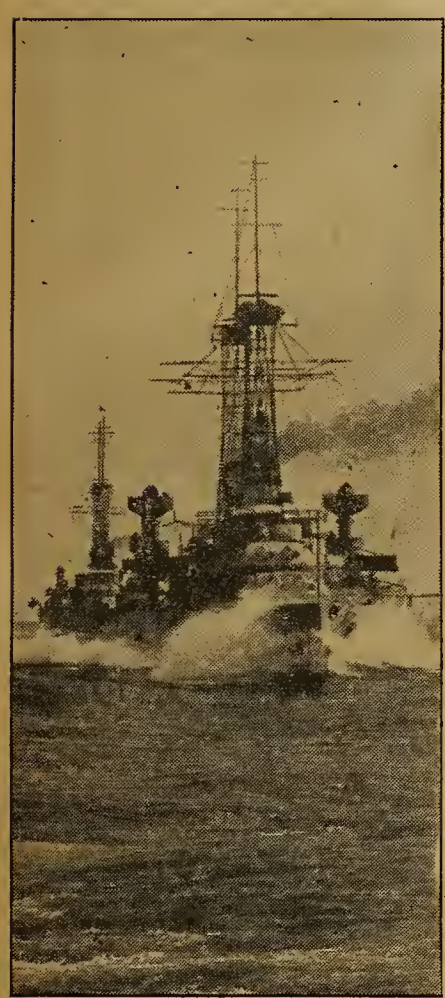
FIVE of the mightiest sea fighters in Uncle Sam's steel fleet. Floating forts such as these amply guarantee the safety of American coasts and help to keep unblemished the prestige so triumphantly held by Columbia since the days of Paul Jones and Perry. The Delaware, Oklahoma, Texas, Florida, and Utah are the ships represented. They were photographed from the deck of a sister ship.



Copyright by Underwood & Underwood, N. Y.

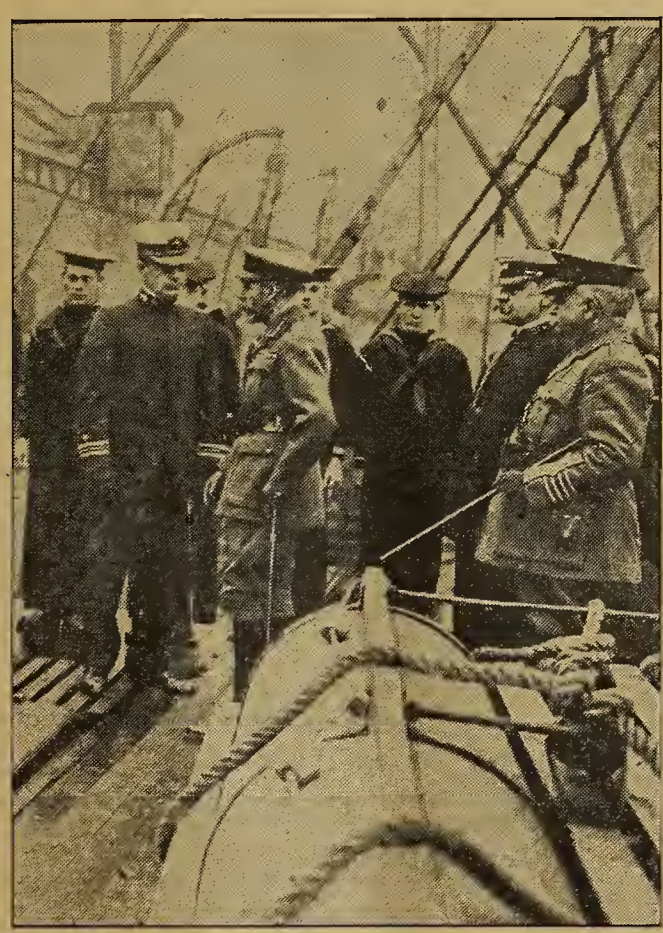
THIRTY miles an hour is the speed kept up by the torpedo fleet in this practice trip. Newspaper men, photographers, moving-picture men, government officials, and other privileged visitors crowd the deck of the ship in the foreground. Service in the torpedo squadron is popular with American tars, since this is one of the most important branches of the naval fighting machine.

What the War Means for Our Tars



Copyright by Underwood & Underwood, N. Y.

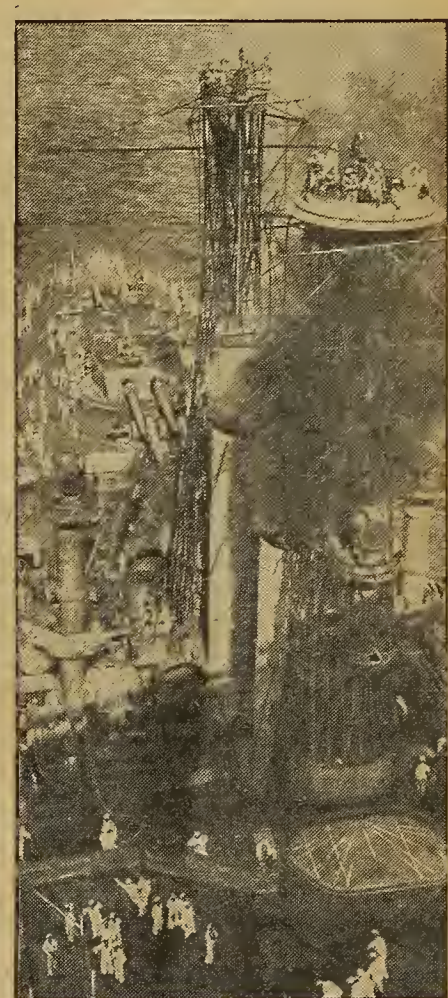
THE U. S. S. New York in this remarkable photograph has been caught by the camera while coming head on, plowing the way for the rest of the division of which she is flagship. Judging from the smoke and spray, she is capable of making things happen, and, as a matter of fact, she is one of the navy's proudest battlers.



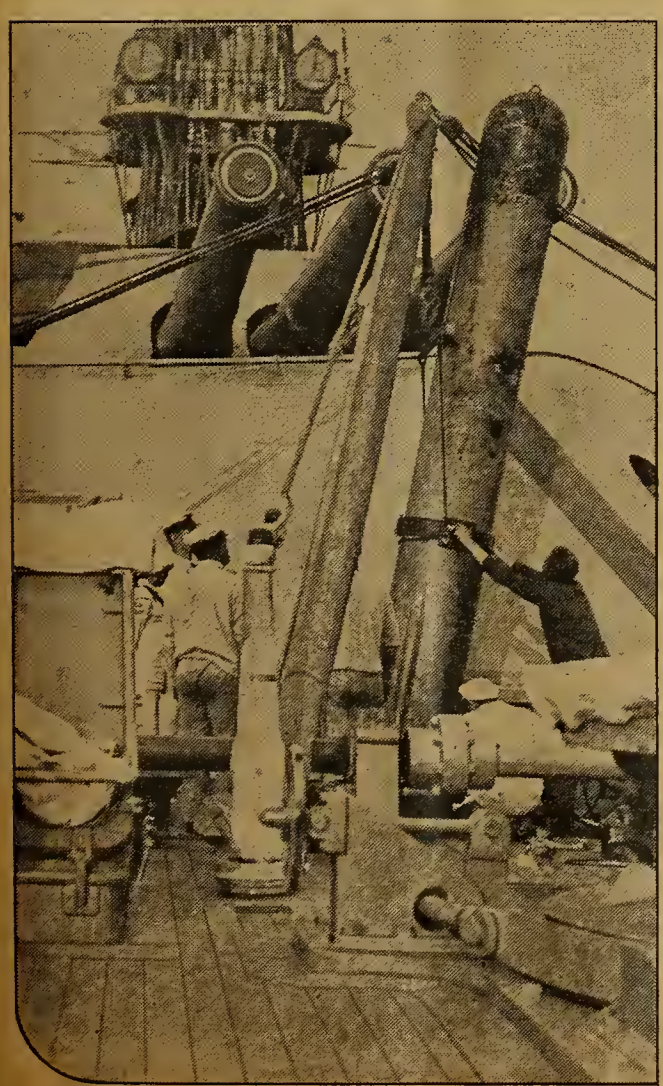
Copyright by Underwood & Underwood, N. Y.

THIS is the first time King George of England ever conversed chummily with American bluejackets on an American deck. The Yankees have just shown the king a fine anti-submarine gun which aroused his lively interest, and which they hope will awaken even livelier interest in German submarine captains when the U. S. tars give a practical demonstration of its operation for their special benefit.

THE curious effect in this photograph comes from the fact that the view was snapped from above. It shows the U. S. S. Utah steaming away from the New York Navy Yard just after the celebration of the launching of the Arizona. The camera registered the scene just as the Utah passed under the new Manhattan bridge.



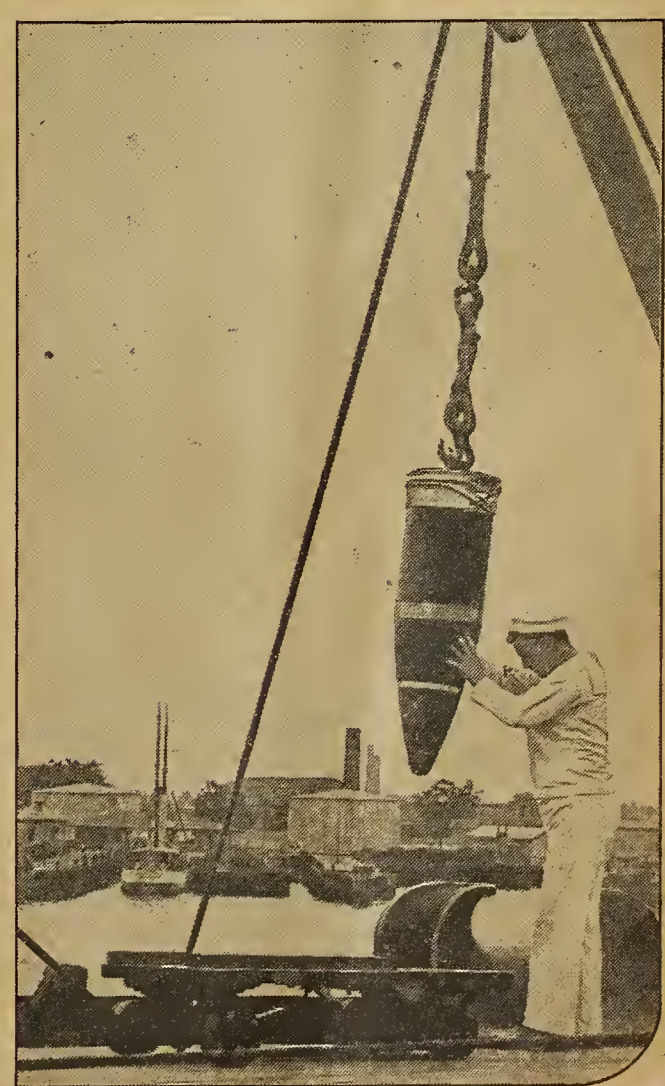
Copyright by Underwood & Underwood, N. Y.



Copyright by Underwood & Underwood, N. Y.

TORPEDO practice on an American battleship isn't all glory and high excitement, as a glance at this picture will show. In the way of ease and comfort, the threshing crew down on the farm have it all over the fellows who have to handle these big death-dealers. At this moment they are lowering a 21-inch torpedo on the U. S. S. Pennsylvania into the hold after it has been recovered.

JUST another example of the man power necessary to put Uncle Sam's little gifts for the Kaiser where they will, at the proper time, do the greatest possible damage with the least possible trouble. The muscular chap in white duck is helping to swing the huge bulks over the side by means of a tackle, where they are transferred by trucks on the decks to the ammunition hatches.



Copyright by Underwood & Underwood, N. Y.

FARM and FIRESIDE
THE NATIONAL FARM PAPER

Harry M. Ziegler, *Managing Editor*
Associate Editors:
D. S. Burch B. F. W. Thorpe Ruth M. Boyle

Published Twice a Month by
The Crowell Publishing Company
Springfield, Ohio
GEORGE H. HAZEN, President
Executive Offices: 381 Fourth Avenue, New York City. Branch Office: Tribune Building, Chicago.
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

H. J. Brown, Jr., *Business Manager*
D. W. Henderson, *Advertising Manager* L. V. Rodda, *Circulation Manager*

Subscription Price
One year (24 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents a year.

About Advertising
Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.
Advertising rates and regulations furnished upon request.

August 4, 1917

Avoiding Glut Prices

ALTHOUGH the principal farm crops have been selling for about 100 per cent higher than a year ago, the producers didn't get the increase. Here and there were farmers who were able and did hold their crops until they reaped the high prices, but the bulk of the crops were sold shortly after harvest and at the usual glut prices.

The prices paid for crops just after harvest aren't true indicators of real supply and demand. For this reason the producers who sell their crops during this period hand over to the middlemen the benefits derived from any increase in prices. During the last year the middlemen reaped the greater part of the 100 per cent increase in the principal farm crops.

One reason why so many farmers sell their crops at harvest time is the need of ready money. This early marketing causes a glut which depresses prices to the lowest mark of the year.

Here is where the speculators step in and reap a rich harvest. Although the wartime demand for all foodstuffs has forced the present high prices the producers are enjoying, even in peace times producers can make a lot more money out of their crops if they can hold them until the steadying influence of supply and demand has had an opportunity to do its part.

Fortunately, the old order of things is changing. Because of better prices for farm crops and greater credit accommodations, farmers are enabled to hold their products and fix the price. This gives the farmer more money for his efforts and doesn't increase the price of the foodstuffs to the consumer. It takes away a part of the profit of the middleman and gives it to the producer and the consumer. Hence the farmer gets more for his crops and the consumer doesn't have to pay as much for the things he eats.

War Profits and Taxes

JUST where to place the burden of war taxation so it will be easiest to carry is the problem that Congress is trying to solve. This is an opportunity for statesmanship, and in adopting the suggestion of an excess-profits tax the Finance Committee of the Senate justifies the traditions surrounding the creation of the Senate by the framers of the Constitution—the belief that one of the chief functions of the upper house should be to check hasty or ill-advised legislation.

Some of the earlier tax proposals looking toward the collection of war revenues assumed that the taxes must be paid by the people directly, and that if everyone was taxed a little here and a little there the burden would be light and borne with little complaint. Musical instruments, restaurant checks over a certain amount, railroad tickets, bank checks, admissions to moving-picture theaters—these and other alleged luxuries were to be subject to small tax levies.

But the present and more businesslike plan for defraying the cost of the war is to take it from the excess profits of industries making the greatest dividends as the result of the great conflict. Such industries include steel corporations, munition works, mining, oil, and chemical concerns, meat packers, and certain leather, rubber, and textile concerns.

The net income of 104 leading industrial concerns of these classes amounted to slightly over $290,000,000 in 1912, certainly a liberal profit. But last year (1916) the net profits of the same concerns aggregated more than $1,366,000,000, nearly five times the former figure.

The House bill provided for an excess-profits tax of 16 per cent, with various qualifying clauses. This figure has been held in contempt by financial experts, who contend that 40 per cent for the first year, 60 per cent for the second, and more for subsequent years, should the war continue, represent a scale of wartime taxation that is none too high.

The principle of making those who are benefited most pay the most is sound from a business point of view and sane from the human side. The people have responded liberally to the appeal for an orderly registration, food conservation, the Liberty Bond issue, and the Red Cross.

Thus to tax the little comforts of life to which everyone is accustomed would be irritating and unjust when we have a vast reservoir of industrial wealth, created by the war itself, to draw on.

The $3 Rat

SOME years ago, when wheat was worth around 80 cents a bushel and corn about 60 cents, a government expert figured that a rat's board bill was about $1 a year.

The inference was that this was high, and no good farmer would tolerate such a leak in his business if he could prevent it.

At present grain prices, a rat of equal size and appetite costs at least $3 a year to feed. So we ought to think three times as hard about the rat problem as formerly.

The remedy is concrete floors and foundations, rat-proof granaries, and active warfare against this pest with dogs, traps, and poison.

Keep Road in Repair

SHORT-SIGHTED road officials have in some instances discouraged road improvement work this year because of high prices for material and labor. Reasonable caution against road-building at exorbitant cost is natural, but the importance of keeping rural highways in good repair, especially during crop-moving time, is apparent to everyone who considers the matter broadly.

For when the crops which we have been urged to raise in abundance are harvested, the work is only half finished. To fulfill the purpose for which the crops were produced, they must be transported quickly and economically to market.

The expense of keeping the roads in good condition is small compared with the loss that will be sustained by producers who are unable to get farm produce to market at the most advantageous time because of road neglect.

Let us at least keep what roads we have in good repair. This takes time and a good deal of concerted work. Prodding the road officials to their duty is a disagreeable and tedious task, but one that will give us a great deal of satisfaction when hauling our produce.

Rollin Kirby in the New York "World"

The Order of Service

Our Letter Box

How Hoppers Saved the Day

DEAR EDITOR: As a measure of health improvement, something over a year ago I journeyed from an Eastern State and located on a Colorado dry claim. Limited means made it necessary to make my homesteading as nearly self-supporting as possible. At the start my live-stock assets were a horse and cow, but I pined for fresh eggs and juicy chicken and I soon invested in a dozen Leghorn pullets. Had I, when buying them, realized how scarce was suitable chicken feed on a dry homestead claim, I hardly should have had the courage to try poultry-keeping. But the chickens proved profitable and helped to put me on the road to better health in spite of food shortage.

The oats used to prevent breakage in packing my housekeeping outfit when coming from the East provided hen feed for a time; then, when summer came, swarms of grasshoppers, together with sour milk and green stuff, furnished the sole feed for the hens, and they laid well until the hoppers failed them in the early fall.

The 50 chicks I hatched also made good growth on the sour milk, grasshoppers, and a little prepared chick feed. With the coming of cold weather in fall and winter I trapped and fed jack rabbit, also vegetables, alfalfa, and a limited quantity of grain mash and scratch feed. I wintered three dozen hens and three roosters and weighed every chicken used on the table, and credited all poultry and eggs eaten. At the end of the first year my account for feed purchased for mature stock was $30.73, and the value of poultry and eggs sold and eaten was $72, leaving a balance to the good of $41.27. Sour milk and grasshoppers and jack rabbits have no market value, but they helped to tide over most acceptably my first year on the dry claim.

Best of all, life is taking on a more rosy hue with rapidly improving health and the courage that it brings. Another cause for thankfulness was the fact that I was saved from accepting aid from friends, which is not an easy thing for an independent soul to do gracefully. E. LOUDEN, Colorado.

Scientific Fruit Culture

DEAR EDITOR: In one of your articles about a four-acre farm, you call it a "man-size job" to make a good income from a few acres. There is a small orchard in Lexington County, South Carolina, from which five thousand dollars' worth of peaches was sold on the Columbia market last season.

The soil of this orchard is a poor sand, no clay subsoil, but a red sand which gets hard and dry in summer. Most of the trees were set in holes blasted with dynamite. The soil was supplied with humus from pea stubble, and holds moisture as far down as it was broken with dynamite. The frost missed this spot this year, so that a fine crop of peaches was grown. The fruit was large and showy, and brought high prices.

All around this orchard are others the soil of which is clean white sand without a particle of humus in it. Between the trees it is usually planted to cotton, the stalks of which are about 8 to 12 inches high with 2 to 5 bolls to the stalk. The peach trees are ragged with dead branches among them—a neglected-looking lot.

The fruit that does begin to grow on the trees stops when the moisture in the soil becomes exhausted. The cost of keeping these orchards is but little less than that of the best orchards. The only difference is the conservation of moisture by blasting the holes in the beginning to set the trees, and by growing peas between the rows and turning under the vines, using a little lime to prevent souring.

R. F. VANN, South Carolina.

Opens Up Indian Grave

DEAR EDITOR: Twelve years ago when digging a cistern at our home in Marion, Kansas, my husband dug into an Indian grave. It was about five feet deep and lay north and south. It was filled with white ashes, which once were the bones, but now crumbled to dust. The grave contained many interesting relics. One was a large circular rock of red sandstone, with a crease around it for fastening a thong of leather. It had been used for torturing captives and also in Indian sports. Another stone, shaped like a foot, they used to shape and make moccasins over.

There were two circular smooth rocks, probably used to take the hair from hides. Another rock was hollowed out like a mortar for pounding corn. We found over a gallon of charred corn still on the cob. At first the grains were perfect in shape, but some crumbled up after being exposed to air. Some of the other relics were an elk horn, blackened but perfect in shape, two whetstones, a piece of clay shaped like a tomahawk, some red clay ground up for war paint. There was an arrow head of flint, and bones of a horse and a dog.

This evidently was the grave of a chief, since his horse and dog were buried with him. One thing we could not account for at first in the Indian grave was a pair of cross guns from a soldier's cap and an old percussion-cap box.

What was the history of those articles? The grave was not far from the Santa Fé trail, and perhaps the Indians captured a soldier and his cap was given to the chief.

MRS. DAISY BROWN, Kansas.

Likes the Fiction

DEAR EDITOR: Will you please give me a little room? I am only a sixteen-year-old country girl, and have no good suggestions to bring, but I want to express my appreciation of this year's fiction.

"The Blue Envelope," in my opinion, is the best story that has been in the paper since I have been large enough to read and understand stories. The short stories are splendid, too. We also receive much valuable information from other parts of the paper, and feel we could not well do without it in our home, where for seventeen years it has been a semi-monthly visitor.

RUBY E. PAYNE, Kentucky.

F.W

Straub Bros.' Farm, Avoca, Iowa

Well Done Beyond Comparison

There is a sound old maxim which says that if you want a thing well done, you must do it yourself.

Our experience in the tire business has been a constant confirmation of this truth.

We wanted a thing well done—we wanted the Goodyear Tire well done beyond comparison.

In striving to have it well done, we found the accepted formulas of tire-making wholly inadequate.

We found, for example, that the type of bead commonly used invited rim-cutting.

So we developed the No-Hook bead, which protects Goodyear Tires from rim-cutting.

We found that the type of base commonly used stretched and was insecure.

So we evolved the Braided Piano-Wire base, which didn't stretch, and which *was* secure.

We found that the accepted method of curing allowed wrinkles in the fabric, with consequent blow-outs.

So we perfected the On-Air cure, which permitted inspection and prevented such wrinkles.

We found that as the skill of workmen varied, the quality of the tires varied.

So we produced the Tire-Making machine and reduced the chances of human fallibility.

We found that the fabric used in tires lacked in the strength we wanted.

So in our own mills we developed a fabric stronger than the world had known before.

These are only a portion of the things we have had to do for ourselves, in order to make Goodyear Tires well done beyond comparison.

These are only a few of the factors contributing to that quality in Goodyear Tires which has made them a proper monument to our endeavors.

They are very much better tires than would otherwise be possible.

So much better that the motorists of these United States buy more of them than of any other brand.

You will come to Goodyear Tires—the growing margin of Goodyear leadership assures it.

When you do come to them, you will buy them of the Goodyear Service Station Dealer near you.

He will help you, after the purchase, to get out of Goodyear Tires all that we have built into them—that is his mission.

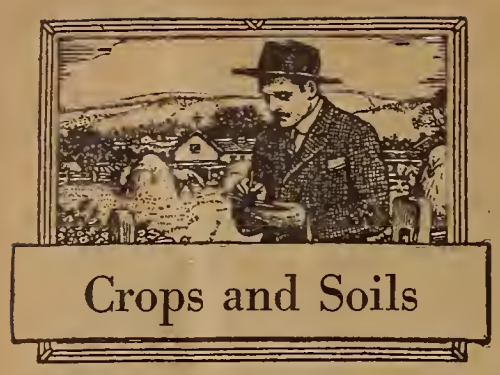
He will tell you why Goodyear Tubes are better tubes—and what they mean in lowering tire expense.

And he will explain to you the function of the Goodyear Tire-Saver Kit, which, as a primary element in tire conservation, certainly should be in your car.

The Goodyear Tire & Rubber Co., Akron, Ohio

GOODYEAR
AKRON

E.W



Crops and Soils

Increasing Wheat Yields

By John Coleman

THAT the use of manure as a top-dressing in preparing land for wheat increases the yield materially has been shown by experiments made by the Kansas Experiment Station. These experiments cover a period of six years. Two fields are used continuously for growing wheat. These fields have the same kind of soil, are always plowed and cultivated in the same way, and are seeded at the same rate and time. One field, however, receives 2½ tons of barnyard manure each year as a top-dressing, while the other receives no manure whatever.

The first yield was obtained from these fields in 1911, when the manured field made a yield of 29.39 bushels to the acre, and the unmanured a yield of 25.84 bushels an acre, showing an increase of 3.55 bushels an acre through the use of manure.

This difference was not so great as during later years, because the greatest increase in yield of wheat from manure does not come the first season after the application.

In 1912 the yield was low because of poor wheat conditions. The yield from the manured field was only 6.68 bushels an acre, while the unmanured field yielded but 5.68 bushels. A noticeable factor in these figures is that as the yield decreased the effect of the manure also decreased. This indicates that during a poor season for wheat the effect of manure will be less than in a favorable season.

In 1913, 1914, 1915, and 1916 the increase resulting from the use of manure became more pronounced, ranging from six to nearly eleven bushels. This marked difference is no doubt due to a number of causes. The field which had received no manure is becoming less productive, while the one receiving manure is apparently becoming more productive and the cumulative effect of the manure is becoming more noticeable.

The average yield for the unmanured field was 17.20 bushels, while the manured field yielded 23.47 bushels an acre, or an average increase for five years of 6.27 bushels an acre, due to the annual application of 2½ tons of manure applied during the winter as a top-dressing.

Fighting Hessian Flies

HESSIAN flies come from two sources—the stubble of the previous crop, and volunteer wheat. To control the danger a concerted fight must be made by all the wheat growers. If only a few clean up, their crops will be damaged from Hessian flies which have developed in the neighboring fields. The person who is bothered with Hessian fly this year must start immediately after harvest to practice methods of control which have been found practical and effective.

The stubble should be disked as soon as possible after harvest, conserving the moisture and making plowing easier. This early disking also starts the growth of volunteer wheat, and tends to have the fly emerge early, or it exposes the "flaxseeds" to unusual conditions which are fatal to a great many of them.

The ground should be plowed to a depth of at least six inches, and all the stubble and volunteer wheat buried under at least three inches of soil. This will bury practically all the flies, so that it will be impossible for them to reach the surface. If the plowing is done about three or four weeks after the disking, it gives the volunteer wheat and weeds a chance to start their growth and they are then more easily controlled.

After plowing, the ground should be worked until it becomes a good seed bed. All the time, however, destruction of the volunteer wheat should be kept in mind. If ground upon which wheat has been grown is left to be planted to spring crops the following year, it is of vital importance that the flies be destroyed in these fields. Fields of this character should be plowed or listed late in the summer before the near-by wheat is seeded. If these unplanted fields are left undisturbed, the flies will emerge from the stubble in the spring before weather conditions are such as will permit plowing, and migrate to the late-sown fields of wheat which were free from infestation in the fall. This is one of the reasons why some late-planted wheat fields which were not infested last fall have been damaged by the Hessian fly this spring.

The second factor in controlling the fly consists in delaying the planting of the wheat until the vast majority of the flies have emerged and laid their eggs.

Making Hay

EVEN with perfect weather, the best hay is secured by raking into windrows as soon as well wilted, and afterward piling into small cocks before any of the leaves become brittle. At this stage the leaves are drier than the stems, but in the cocks this is partially equalized by the leaves absorbing moisture from the stems.

Under the best conditions hay may be stacked or housed the same day it is cut, but this is seldom done until the second or third day. The conditions sought in prime hay are bright color—that is, as green as possible—good aroma, retention of leaves in legumes, and freedom from dust or mold spores.

When thus cured there is less bleaching from the sun, or sun and dew combined, few leaves are lost by becoming brittle, and a higher degree of aroma is engendered.

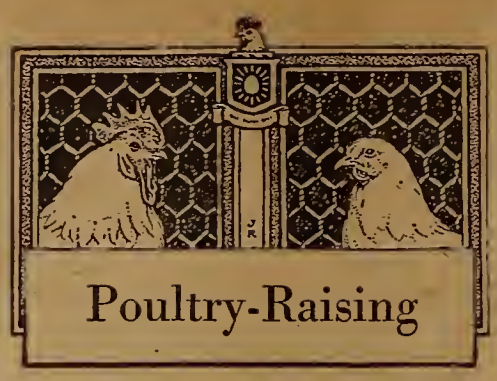
While haymaking in favorable weather is simple, it becomes greatly complicated by cloudiness, rain, and heavy dews. Rain is injurious both because it delays drying and because it leaches out soluble nutrients. If long continued, especially in warm weather, it induces a growth of various molds and other fungi, and the hay becomes dusty.

While the difficulty of curing grass is great, it is far less than in the case of legumes. Grasses have slender and usually hollow stems, and persistent leaves, while most legumes have solid stocks that are relatively thicker, and consequently dry much more slowly.

Furthermore, the leaflets of legumes dry first, and fall off easily when the hay is half cured, so that if much handled a large portion of the leaves will be lost. In addition, legume hays do not shed rain water as well as does grass hay, the latter, indeed, often being put on top of legume hay to shed moisture.

Unfavorable weather greatly increases the cost of haymaking, both in requiring more labor and in causing greater loss of leaves from the more frequent handling.

Modern hay-handling machinery is an effective and time-saving means of getting the hay under shelter in threatening weather



Poultry-Raising

A Year with Geese

By A. L. Roat

IN THE spring of 1916 I made a start in goose culture by purchasing a trio of White Embden stock. I gave them a good productive meadow and orchard pasture lot to insure fresh grass. There was no opportunity for the geese to swim, there being only a brook a few inches wide to furnish fresh water. These geese forage for practically all they consume, and require scarcely any attention.

When the geese began to lay, the eggs were set under chicken hens—four to a hen. The eggs were occasionally sprinkled with tepid water, and a week before due to hatch, the eggs were immersed in water of 100 degrees Fahrenheit temperature. Practically all the eggs set hatched goslings.

Foster mother and goslings continued devoted foraging companions for weeks

The first feed given the goslings was skim milk, hard-boiled eggs, and a sprinkling of green onion tops. Later, cooked ground grain and a little bone meal furnished their diet along with pasturage until they were old enough to make most of their living from forage. These young geese sold for from $3 to $4 each for the holiday market in Philadelphia.

I believe 30 to 50 geese could be pastured on each acre of first-class heavily producing pasture land if the field were divided into two or more divisions so as to allow a rotation from one plot to another.

Making War on Rats

By Elmer Euvert

MY CHICKEN house has a dirt floor. Consequently, I have been considerably bothered by rats after the grain. Neither traps nor cats solved the rat problem, so I decided upon a scheme that is entirely new in this section of the country. I will tell FARM AND FIRESIDE readers about it.

Having used a good deal of dynamite for stump-blasting, I noticed that the fumes after an explosion are decidedly unpleasant in close quarters. Ordinarily it requires a blasting cap to detonate dynamite, but if a piece of fuse is stuck into it, it usually burns or smolders, creating a dense, noxious smudge.

I placed some small pieces of dynamite, with fuse attached, in the rat holes, stopped up the entrances, and lighted the fuse. The fumes must have either killed or driven away the rats, as I haven't seen any of them around the chicken houses since.

I learned recently that there is an article on the market even better than dynamite for the purpose mentioned. It is called an exterminator cartridge, and there is no danger of its exploding. The smudge it creates is even more noxious than that caused by the smoldering of dynamite, and it is said to be very effective in driving away rodents, moles, prairie dogs, gophers, and similar burrowing animals.

Hastening Molt by Picking

MANY poultrymen have made attempts to force the molt on hens and get them ready for early production when eggs command an attractive price in October, and from then on during the winter months. The plan of compelling hens to undergo a fortnight of fasting has had its advocates, but this plan has generally proved a disappointment. Now a new molting prophet—Mrs. F. W. Jares—has arisen in Texas. Note her molting recommendations:

"I tried out all the various molt-hastening systems I could learn about, but they proved a failure. However, I refused to be beaten out by a hen. I then began working on the principle that if the feathers were plucked from the hen others would immediately grow. I find that the feathers of hens that have hatched chickens come out readily. I reasoned that if the hens were fed nothing but green feed and all fattening feed was kept from them, their feathers would loosen, could then be plucked out, and they would be full feathered and ready to lay in October.

"I accordingly penned up a number of my hens about the middle of July and fed an abundance of green feed and gradually decreased all fat-forming food. By keeping watch and by making tests I found when the feathers had loosened enough to pick without injury to the hens. I then picked most of the feathers from them, and gradually got them back on full feed that was well adapted to growing their new coat. When picking I removed all the tail feathers, a part of the wing feathers, but left enough on the back and neck to prevent sunburn. I also left some of the feathers which help to support the wings. The feathers left gradually dropped out as the new ones were growing. In fact, the plan of picking is mostly a thinning process, but I remove fully 75 per cent of the feathers. After the hens have been penned up and dieted as I have described, the feathers pluck out about as easily as geese feathers do when 'ripe.'

"I have now practiced this plan of forcing the molt for four years with my whole flock, and am satisfied that it pays me well by making possible fall and winter eggs from my one and two year old hens, which formerly refused to lay until nearly spring."

Be Sociable with Hens

By J. T. Raymond

GET acquainted with your hens. Handle them. Take an interest in their shape and color. Have you any which would score well under the standard? The poultry keeper who really knows his flock is almost always a money-maker. One of the good things about trap-nesting, although it is little dwelt on, is that it encourages a poultry keeper to learn a whole lot about his flock besides the egg yield.

This empty varnish can hung from the ceiling, with a suitable box attached to its bottom, furnishes a hopper without cost

Wheat Can be Cut Out

By W. F. Orr

MANY poultrymen are still feeding $2.50 to $3 to their layers, believing a heavy egg yield without wheat to be impossible. And they are wrong.

Eighteen months of experimenting by the Government with pens of 30 hens to the pen shows that a ration of 2 pounds cracked corn, 1 pound oats or scratch feed, 3 pounds cornmeal, and 1 pound of beef scrap for dry-mash mixture delivers the eggs in approximately as heavy a supply as when a more costly wheat mixture is used.

A pen of 30 Leghorns averaged 147.3 eggs in the pullet year when fed the above mixture, and heavier breeds laid equally well in comparison. The Leghorns ate 52 pounds of the scratch grain and dry mash about equally divided in weight of both kinds of feed. Omitting the wheat reduced the annual feeding cost of the hens not far from one quarter of the year's total feed cost, reckoning feed at present prices.

COMMERCIAL medicated nest eggs will discourage lice in the nest, but the penetrating scent from such eggs injures the quality of fresh eggs left in the nest, and a broody hen is sometimes killed by the poisoning influence of the medicated eggs.

E

Dairying

Combined Scraper and Brush

By T. H. Linthicum

TO MAKE the task of cleaning farm buildings easier, attach a scraper to any large fiber push brush in the manner illustrated. For the scraper I use a piece of 1¼-inch iron hoop and fasten it on with small nails. This is especially useful in the poultry house when the manure has caked hard, also for washing the floor of the dairy barn.

It does away with the necessity of using a shovel or hoe for cleaning parts of the floor that will not yield to the brush. By having scraper and brush together the work is done quickly and easily.

Separator Prevents Waste

By Mary C. Blue

IN THESE days of high-priced butterfat no farmer can afford to feed it to the hogs. A cream separator is so much more thorough than any other system of securing cream that, with a herd of four cows or more, it soon pays for itself. The system of letting cream rise in crocks and then skimming it off is the most wasteful of all.

But the fact that you have a separator is no proof that you are not feeding butterfat to the hogs. I have visited dairy farms where the separator was not even screwed to the floor. On a cold day I saw one owner move his separator nearer to the stove, while this same machine has often been carried to a place near a window on a sultry day. This machine has never done good work; a separator must always stand firm. A solid foundation and placing the separator so the bowl is perfectly level are the two essentials. A concrete foundation is best, with one of heavy planks a second choice. We made the foundation for our separator by pouring concrete in a frame four inches deep and somewhat bigger in the other dimensions than the base of the separator.

While the concrete was still slushy we sunk two 2x4 timbers down to a level with the concrete. When the mixture was thoroughly hard the lugs of the separator were fastened to the timbers with wood screws. There is no wobble to a machine on such a base.

A foundation which permits a machine to wobble or vibrate excessively makes the separator harder to operate, it wears out sooner, and all the time it is doing poor work. Vibration causes a portion of the skim milk and cream to mix again and a considerable amount of butterfat is lost in the skim milk.

Careful oiling is another thing not to overlook in a machine that operates at as high a speed as a separator. About every ten days we put kerosene through our machine to cut the grease, using kerosene while separating, so the machine will be going at full speed. We also are particular to see that no oil opening is obstructed; I know of one machine that was injured through this neglect. But the greatest and most common cause of loss in operating cream separators is turning them too slow.

One of the little instruments that indicates the speed of a separator is a very useful thing to have, for in most makes of separators slow turning means a loss of butterfat. I have noticed also that thorough cleaning twice a day is considered unnecessary by some people who are satisfied with one washing and one flushing out. But aside from sanitary reasons which in themselves are important, our experiment station has demonstrated that more fat is lost when the machine is washed only once a day. Who would think of letting the milk pails stand overnight without washing? Wouldn't they be harder to wash next morning? Occasionally we have allowed ours to stand overnight, but it is so much more difficult the next morning that we feel it is time lost.

We always separate right after milking while the milk is still warm. If it gets cold it is best to warm it before separating, as warm milk skims more closely than cold. When the separator is installed on a solid foundation, kept well oiled, level, and clean, it puts money in the owner's pocket and greatly lessens the work of the farmer's wife.

To Save Surplus Cows

THE importance of plentiful dairy products during wartimes has been repeatedly pointed out. But with feed scarce and soaring in price, a reduction of the dairy herds in some sections is confidently expected. In order to prevent the slaughter of such surplus stock, the Government is already making plans to find a market for it.

On this subject, Mr. Helmer Rabild, who is in charge of federal dairy farming investigations, says: "Many farmers in the South and West are seeking dairy cattle, but are having difficulty in finding them. The Department plans to locate the cattle which are for sale, test them for disease as well as for their quality as producers, and then, through extension workers in the South and West, arrange for the purchase of such cattle in these sections. It is hoped by this means to take care of the most valuable animals which are offered for sale, and help, to some extent, in maintaining dairy production."

The federal agricultural authorities have in the past been reluctant to take an active part in matters relating to the commercial side of dairying, holding that their work is more properly of an educational or experimental nature. But the proposed activity of the Department to see that all demands for dairy cows are filled before valuable stock is slaughtered will have the approval of every good dairyman and loyal American.

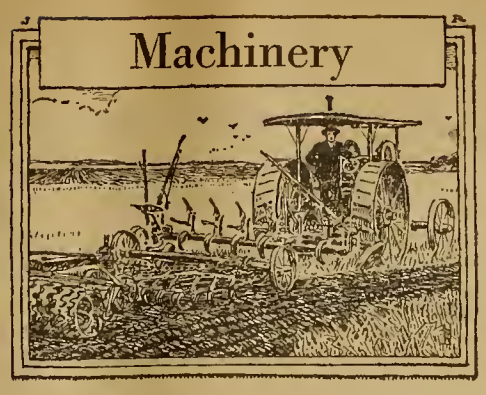
Keeping Quality of Silage

By D. B. Stockwell

"HOW long can silage be kept?" asks a Wisconsin dairyman who wishes particularly to know whether it will remain in good condition over the following summer if the silo is not opened.

Silage in a good silo will keep almost indefinitely. Like canned goods, it will keep for years in practically as good condition as when put up. But in ordinary farming practice, where there is stock to feed, little is gained by attempting to keep silage too long. Better feed it the winter after it is produced and grow more the following summer. But if you are putting up silage with the intention of keeping it two or three years against a possible shortage of feed, first make a very careful inspection of the silo, being sure that all the walls and door casings are air-tight, and then pack the silage especially well.

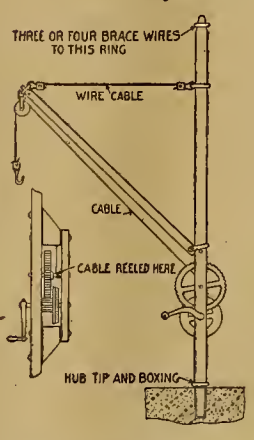
If the silo is thoroughly air-tight, its contents will keep bright and fresh for several years. This is a 12x30-foot metal silo



Machinery

Derrick from Old Mower

By R. E. Deering



ON THE one-man farm there are always lifting jobs that are too heavy for one man. One of the best labor savers I have added to my equipment is a small derrick. With it I can remove the bed from the wagon, or unload machinery, barrels of salt or oil, and other heavy objects. Once I butchered and swung a 400-pound hog without other help. It also comes in handy when overhauling the binder or other heavy machinery where much lifting has to be done. I located the derrick near my well, and now can take up the pump without other aid. Formerly this job required two extra men.

The mast is 12 feet long and has a hub tip from an old wagon fitted to one end. This fits the boxing, which is set in concrete. The other timber is 7 feet long. It has a pulley at one end and is fastened to the mast at the other. The gearing was taken from the driving gear of an old mowing machine, and mounted as shown.

Take Care of Canvas Covers

THE demands of the Government upon the cotton mills of the country for canvas indicates that cotton duck will be a rare commercial article until the end of the war. As in other lines of supplies, military demands must be met first, which includes especially the medium weights of cotton duck, such as are used for tents, wagon covers, and similar purposes.

This grade of material is practically the same as used on farms for haystack covers, hay caps, and as coverings for farm machinery. The wise course to pursue, therefore, is to take an inventory of the farm canvas and see that when not in actual use it is stored in a dry place safe from rats. If left in a damp place or on the ground mildew and decay will soon weaken the fibers. If the canvas is still in good condition, treating it with preparations to keep it pliable and weather-proof is frequently advantageous. "Let us take care of what we have" is a good slogan to adopt in the care of perishable farm equipment such as this.

Harvesting with Gas Engine

By H. E. Thorp

A SMALL gasoline engine has so many uses and is so easily adapted to most any kind of work that I have come to consider it a necessity on my farm. One use to which it was put last season easily paid for its cost. This was for helping me harvest a crop of grain that would otherwise have been badly damaged by rain.

The ground was so soft from continual wet weather that no extra attachments or devices on the binder drive wheel would give the necessary power for cutting and binding. The wheel would slip, the binder clog, and the team stall.

But with the special attachment that came with it, the small engine was mounted on the binder and harvesting went on as usual. The engine was a four-horsepower, light-weight type, and furnished power to do both cutting and binding. The team merely had to pull the machine. Forty acres of grain were harvested in this way. The same method was used later in the season to cut a 12-acre corn crop. Fifteen gallons of gasoline were used in cutting the total 52 acres. It took about two hours to install the engine on the grain binder, and about an hour more to put it on the corn binder.

Others in the neighborhood who relied entirely on horsepower were from eight to ten days later in completing their harvest, with the resulting loss of damage by rain and shattered grain.

Preparing for Tomorrow

Many people seem able to drink coffee for a time without apparent harm, but when health disturbance, even though slight, follows coffee's use, it is wise to investigate.

Thousands of homes, where coffee was found to disagree, have changed the family table drink to

Instant Postum

With improved health, and it usually follows, the change made becomes a permanent one. It pays to prepare for the health of tomorrow.

"There's a Reason"

BOOK ON PROGRESSIVE FARMING, Price $1.00
Twenty-five years' experience in scientific methods of farming. Specialty on Alfalfa and chemically treating barn yard waste.
F. G. DOKKENWADEL Coshocton, Ohio.

KEROSENE ENGINES OTTAWA LATEST DESIGN
Durable, Powerful, Reliable, Massive. Built to last; to do hard, heavy work. Uses Cheapest Fuel. Pulls 25 to 50 per cent over rated H-P. *3 Months Trial. Easy Terms.* Sizes 1½ to 22 H-P. Easy to Start. No cranking. No batteries. 10-Year Guarantee. Most practical engine ever built. Engine book free. A Postal brings it. Write today.
THE OTTAWA MANUFACTURING COMPANY, 1151 King Street, Ottawa, Kansas.

Eli HAY PRESS KING OF BALERS
40 styles and sizes for every purpose. Catalog free.
COLLINS PLOW COMPANY 1116E Hampshire St., Quincy, Ill.

Only $2 Down
One Year to Pay!
$29 Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.
30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.
ALBAUGH-DOVER CO. (12) 2139 Marshall Blvd. CHICAGO
100,000 now in use

CORN HARVESTER Self Gathering for cutting Corn, Cane and Kaffir Corn. Cuts and throws in piles on harvester. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only $22 with fodder binder. The only self gathering corn harvester on the market that is giving universal satisfaction.—Dexter L. Woodward, Sandy Creek, N. Y., writes: "3 years ago I purchased your Corn Harvester. Would not take 4 times the price of the machine if I could not get another one." Clarence F. Huggins, Spearmore, Okla.: "Works 5 times better than I expected. Saved $40 in labor this fall." Roy Apple, Farmersville, Ohio: "I have used a corn shocker, corn binder and 2 rowed machines, but your machine beats them all and takes less twine of any machine I have ever used." John F. Haag, Mayfield, Oklahoma: "Your harvester gave good satisfaction while using filling our Silo." K. F. Ruegnitz, Otis, Colo.: "Just received a letter from my father saying he received the corn binder and he is cutting corn and cane now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing picture of harvester at work and testimonials.
CORN HARVESTER MFG. CO. Salina, Kansas

$1.95 Made to Your Order
Special Offer — to prove our fine quality: These fine Pants for Dress or Business, choice of many handsome styles, guaranteed for 18 months solid wear and satisfaction or MONEY BACK, absolute $5.00 value—while they last, one pair to a customer, Express prepaid for only - - - $1.95 PANTS
No Extra Charges
No charge for big Extreme Peg Tops or Cuff Bottoms, nothing extra for fancy Belt Loops or Pocket Flaps, no charge for Open Welt Seams or Large sizes—all novelty features Free — no extra charges of any kind.
Cash Profits to you for taking measures of relatives and neighbors. Young George Gekovich made $66.16 in one day. Write for FREE samples today.
Chicago Tailors Association Dept. A-62, 515 S. Franklin St., Chicago
Send No Money

Choose Varieties Wisely

By B. F. W. Thorpe

I WAS strongly impressed with the great importance of the right choice of varieties of small fruits and garden truck during recent visits among growers of these crops in several different States. The marketing season was at its height, and some growers were reaping much better profits than others, merely as a result of having truck and fruit just adapted to their particular market needs.

In the case of strawberries, raspberries, and cherries, I found growers trying to ship fruit to distant markets which was absolutely unfit to withstand long shipment; also the reverse. Fruits of rather inferior quality but of firm texture, suitable for distant markets, were being offered to local markets and private customers, who have a right to expect from local growers the very best in flavor and general high quality. The matter of selecting and growing just the right thing to suit local and distant markets must be determined before the plantings are made, or else the marketing is sure to be disappointing.

A MISSISSIPPI gardener, Mrs. C. J. Ryker, writes that she propagated 450 strawberry plants from the runners which grew from four Lady Thompson plants after they had produced a crop of berries. The original plants were furnished her by neighbors.

Wild Flowers by Post

SOME young people on Massachusetts farms for a year or two past have developed a nice business selling wild flowers and plants to town and city residents with which to make wild-flower gardens. The plan followed is to advertise in the classified department of city papers to furnish different varieties (some definite number) of wild flowers and ferns for $1 or other price advertised, to be sent by parcel post. The plants sent are of small size, containing only sufficient roots and top to make a good prospect for future growth. The plants are packed in moist moss and are shipped late in the fall or early spring when transplanting conditions are most favorable.

In some wooded and other favorable localities there are almost unlimited quantities of wild flowers—often considered weeds—to select from. Considerable experience and care are required to dig successfully and prepare some varieties for shipment to insure good chance of growth when transplanted.

Some of the wild flowering plants used for this purpose, and which develop in the spring from bulbs, are popularly known by the following names: Adder's tongue, spring beauty, squirrel's corn, Dutchman's breeches, and ground nut, and are best taken up in the fall. They are small, and much time will be saved if sections in which they are plentiful are located and marked during the blossoming period.

Of the ferns and flowers which start from roots there is a great variety and numerous combinations for parcel-post sale can be worked out. The lovely arbutus is easily transplanted. It appeals to many people not attracted by less fragrant flowers. Maidenhair fern commands a special price because of its great beauty and comparative rarity. Wake robin, red trillium, jack-in-the-pulpit, hepatica, Solomon's seal, foam flower, anemone, bloodroot, lily of the valley, early saxifrage, wild ginger, columbine, and the yellow, white, and wood violet are all practical for transplanting, and most of them are common. There are special money-making opportunities in the rarer ferns and flowers, and city friends will sometimes help in locating prospective purchasers.

SOME orchard owners who have kept tab on expenses contend that orchards of considerable size may be sprayed throughout the season at an aggregate cost of less than 10 cents a tree for material. What is the experience of FARM AND FIRESIDE fruit growers along this line?

Fifteen Years of Beauty

By Cora June Sheppard

A POTTED plant that delights with its thriftiness and floral display for a dozen years or more has a right to recognition. Particularly is this so when the wealth of bloom is so generous.

This crab cactus has been a perpetual delight to its owners and caretakers for a dozen years. Its blossoms number hundreds annually

The crab cactus here pictured, owned by Mrs. Moses Myers, the helpmeet of a New Jersey glass blower, when photographed contained 350 blooms, and from its position on the porch of their home was fairly startling in its riot of color and beauty. This plant has borne as high as 375 blooms at one time.

Mr. Myers has followed his vocation of glass blowing for fifty years, but has found time to give this plant and other flowers needed care. He disclaims that any special coddling has been given the plant—merely good common-sense treatment, making sure it never suffers for plant food, moisture, or from diseases and insect pests. After all, isn't this kind of common-sense care the real secret of success with most kinds of decorative plants? If we follow this plan we unconsciously become experts in floriculture.

Making Most of Truck

WHAT shall be done with the beans, peas, sweet corn, and other valuable staple garden food crops which are now too plentiful to sell at a profit in some localities? Where canning or drying for human food is too expensive or inconvenient, all overplus of crops suitable for feeding poultry, rabbits, pigs, sheep, or other stock should be allowed to ripen, then dried thoroughly in attic, shed loft or elsewhere ready for fall and winter feeding, or for sale to poultrymen, stock keepers, or to feed stores. Many lots of mixed varieties of garden crops unsalable now in the fresh or ripening stage will be in strong demand later when the developing poultry and other stock require extra feed to fatten them for market. Such small lots of leavings of other crops have often gone to waste, but now, when poultry and stock feeds retail for $3 to $4 a hundredweight, nothing of value for this winter's food supply should go to waste.

WHERE plenty of straw is available, a foot of straw after it has settled, worked snugly around the currant and gooseberry bushes, will prevent growth of weeds, retain the moisture, and give fully as good results as clean cultivation with much less labor.

Wire Will Save the Stock

By T. S. Hurd

WHEN lightning strikes a wire fence, horses and cattle standing near it are likely to be killed unless the fence is properly grounded. The electric current will follow the wire until it shoots off to some near-by object. A storm will always drive the cattle and horses along until they come to a fence, where they will congregate, thus exposing themselves to any electric bolt that may strike the wire.

If the fences are properly grounded the electric current will be carried directly to the ground. Ground wires should be placed at intervals of twenty rods. Use a No. 8 or No. 10 galvanized iron wire. A rod or a small cable is better, but is more expensive and hardly can be recommended, especially for an old fence. Twist the wire two or three turns around each fence wire, and by means of a crowbar set it in the ground to a depth of four or five feet.

In a dry section it is better to sink the wire deeper until it comes into contact with moisture, since dry earth makes a poor conductor of electricity. Allow the wires to project a few inches above the fence. These projecting points will conduct into the air any electricity accumulating in the ground, and thus will prevent the lightning from striking anywhere in the vicinity.

If the fence is just being put up, the ground wires may be fastened to the bottoms of the posts. Around the barnyard and feed lots where cattle congregate, ground wires should be placed at intervals of ten rods or less, the closer the better. Where a fence adjoins a building, place a ground wire at the first post. A woven or mesh wire fence need not be grounded if the bottom wire is in contact with the earth.

Demand for High-Class Horses

THE most desirable horse is the one that performs the work required most efficiently and economically, and sells at the greatest profit. Under average conditions this horse will combine size, substance, style, step, and quality. Nothing adds more to the value of a big horse than style, action, and quality.

A big horse without these three things is a very undesirable, unsatisfactory, and expensive form of motive power, either on the farm or in the city. Each year sees less demand for inferior horses, both large and small, and a corresponding increase in the value of high-class horses of three kinds—wagon horses, chunks, and drafters. All of these horses are derived from draft breeds.

Wagon horses weigh from 1,250 to 1,500 pounds, and show style, action, finish, and substance to a marked degree. Chunks weigh from 1,350 to 1,600 pounds, and are compactly built, about two inches less in height than wagon horses of equal weight. They must show quality, action, and especially substance to sell well. Drafters weigh from 1,600 pounds up. The bigger the better if they show the other qualities and are snappy movers.

Good horses of these three classes have been selling at prices ranging from $175 for light wagon horses to $350 for the heavy drafters during last year. Contrary to the general opinion, stockyard records show there has been a gradual increase in the selling value of good horses of these three classes in the last ten years.

Deeper tillage and heavier machinery have created a demand for greater motive power, and for this reason wagon horses, chunks, and drafters are the most satisfactory. Another advantage in these types of horses is that they can be put to work when they are three years old, and worked for a few years, increasing enough in value to make their services absolutely free. This has been the experience of many good farmers, and anyone who understands horses can duplicate the experience.

Trimming Horses' Feet

By Fred W. Hooper, Jr.

IT IS important in profitable horse production to take good care of the horses' feet. The colt's hoofs must be given constant attention from the time the colt is foaled until it reaches maturity.

Even then it needs considerable attention. Often the feet of colts are left to care for themselves. This neglect results in later life in many of the unsoundnesses common to the feet and legs of horses.

The unsoundnesses caused by the lack of care when the horse is young are sidebones, ringbones, splints, bone spavins, bog spavins, and corns.

Rape for Hog Pasture

RAPE is next in value to alfalfa for hog pasture. It will grow anywhere in the corn belt if there is plenty of moisture. The dwarf Essex variety should be planted, as it is not so coarse and is more succulent than the larger varieties. Rape may be used as a catch crop. If planted now it will furnish good forage until dry forage sets in, at least.

Care of Young Pigs

IN ORDER to make a profit from pigs it is necessary to give them the proper care and feed. They should be provided with clean, comfortable quarters, exercise, and plenty of sunshine. The sow should be given special care at farrowing time. She should be fed lightly for a few days after farrowing, and the amount of feed gradually increased as the young pigs develop.

The ration for the sow at this time should be one which will produce a heavy flow of milk. A good ration for this purpose is one composed of corn, shorts, bran, a small amount of tankage, and a good quality of alfalfa fed from a rack. Bran may make up 10 per cent of the ration, as it has a beneficial effect on the digestive system and tends to increase the milk production.

The amount of feed given a sow may be governed largely by her appetite. Tankage should not be fed to exceed more than five per cent. Corn may make up half the ration, as it tends to prevent the sow from becoming thin.

The little pigs should be watched closely for sore mouths, especially in large litters. It is sometimes advisable to clip the tusks from the pigs, thus preventing them from scratching each other. In case of sore mouth, wash the part frequently with a disinfectant.

ARIZONA alfalfa, according to Professor Barnes, commands a ready market at $25 a ton. But it has to be fed to live stock.

If the pigs develop sore mouths, as they often do in large litters, wash the affected parts with a good disinfectant

Here is a new four-part story about a girl and a man who meets the great adventure in the byways of Chicago

The Sealed Room

Tired of Humdrum Days, a Farmer Seeks Romance

By EDWIN BAIRD

PART I

ON a summer morning Tom McKay journeyed to Chicago, seeking romance. And it was in the Union Stockyards that his thought flowed in the romantic channel which led to his encounter with Wah Sing Lo, to his meeting the Girl with the Wistful Eyes, to his acquaintance with the Bald-headed Preacher, and to his thrilling adventure in the Sealed Room.

Ostensibly, he was visiting Chicago for the purpose of seeing Packingtown. Early in the morning he and some two hundred others—all Illinois cattlemen, like himself—had fared forth with the announced intention of acquiring sundry market tips pertaining to their calling. But that was only an excuse for Tom—a peg whereon to hang his pilgrimage. His underlying motive ran deeper than that.

The Union Stockyards of Chicago are scarcely the place to look for romance. You would as soon search for roses in the Great American Desert, or expect to find pearls in a Mulligan stew. The stockyards atmosphere stifles romance.

And yet, to repeat, it was here, and nowhere else, that the exciting romance of Tom McKay had its inception. Looking back now upon the long train of remarkable events which helped to shape his life, he can perceive that they really began at the moment he stood shivering in the refrigerator department of one of the larger packing concerns, surrounded by his friends.

He was gazing with a faraway look in his eyes at a thick-set, earnest man who stood on a platform at one side of the room, submitting a talk on the right and wrong ways of raising stock for the market. This heavy gentleman illustrated his discourse by pointing, as occasion required, to six newly dressed steers, suspended above the platform; and it was to hear his speech and to view these steers that Tom's fellow farmers had traveled from downstate to-day.

But Tom, who only last week had sold ten thousand dollars' worth of cattle in Chicago, and who had amassed a comfortable fortune from similar sales in the past, was, for reasons aforementioned, uninterested in the matter of beef. He stood a little apart from the rest, blowing on his hands in a preoccupied way—for the place was disagreeably cold — and wishing he had worn an overcoat atop his summer suit, when the first small incident in his Great Adventure came to pass.

Perhaps it was his detached attitude which persuaded Mr. P. J. Henneberry, hovering near in watchful fashion, to approach affably, jauntily, on his alert face a cordial smile, right hand extended.

"Mr. McKay, I believe. My name's Henneberry — Patrick J. I represent the Broadway Motor-Car Company—"

"I've got two cars now," said Tom absently, yet definitely too. "I reckon I can worry along with those."

"We've a very attractive deal on now," purred the persuasive Henneberry, producing sundry papers, "whereby you can trade in a used car . . ." His voice rippled on, smoothly, oilily, so deftly modulated as not to compete with the voice of the platform lecturer.

Tom heard the first few words it uttered. The rest was a blur. His mind dwelt not on automobiles. It dwelt on that other so different matter which, more than anything else, had enticed him here to-day, and which, oddly enough, had attained full growth and flowered in the heart of Packingtown.

Suddenly he straightened up. A new light shone in his eye—the light which denotes the love and spirit of adventuresome enterprise.

"By George, I'll do it!"

"Good for you!' exclaimed the delighted Henneberry. "I knew you would."

Tom, who had quite forgotten the salesman's presence, stared at him a moment blankly. Then, with an apologetic smile:

"I didn't mean—just that. Sorry. But give me your card, and if I happen to need a new car some day . . ."

He was off down the long, cool room, dodging in and out between the rows of dressed beef, heedless alike of his curious friends, of the platform speaker, and of Mr. Henneberry, tagging close behind.

Emerging to the warm sunshine—or such of it as filtered through the smoke—he successfully evaded the auto agent and, hurrying to the nearest telegraph station, directed to his foreman the following communication:

Delayed indefinitely. Don't worry. Hunting Trimmed Lamp and others.

The telegrapher's perplexity over the third sentence in Tom's communication was not shared by the man to whom it was sent—George Yocum.

"Um-hum, I thought so," mused Yocum, when he had read the telegram. "It's just like him." And later, as he fed and watered the stock for the night and started home through the late summer dusk, he thought pensively: "I wish I were with him!"

At this moment Tom McKay strolled from an ornate hotel in Chicago and sauntered leisurely in the direction of Randolph Street. He had dined well, he smoked an excellent cigar, and he was in a receptive mood.

He paused at the corner of Randolph and Clark, and cast his gaze over the currents of life hastening noisily in four directions. The streets were ablaze with light and color; the hurrying crowds laughed and chatted gayly. Huge electric signs were everywhere—over theaters, restaurants, cafés, barber shops, saloons. Taxicabs and private cars chuffed and honked, emitting a pungent odor of gasoline. The city was awakening to its midsummer night's pleasure.

"I hope you will pardon me. I happen to have a pair of tickets—and I thought, maybe—you might—" He stammered into an embarrassed pause

All this, to your native Chicagoan, was commonplace, uninteresting; but not so to Tom McKay. To him it was athrill with excitement. That swirl of metropolitan life, to him, was pregnant with mystery, filled with adventure. He was rubbing elbows with romance, so he felt.

His cigar, unnoticed, died. He relighted it, fell in with the ever-shifting crowd, and was swept along to the center of the street. He stopped beside a traffic policeman, and shouted above the ear-splitting din:

"Pretty big crowd in town to-night."

Ignoring him, the policeman yelled to a street-car motorman who was clanging his bell for no apparent reason: "Less noise there!"

Tom persevered: "Can you tell me where I'll find a good show?"

"They're all good," bellowed the policeman, and blew two sharp blasts on his whistle for the traffic to move east and west.

"Thanks," said Tom, and, proceeding to the corner, bought an evening paper from the newsboy there. He didn't want the paper, but he did want to talk, and would have done so, perhaps, had the boy been an American instead of a Greek, who spoke less than six words of English. Anyway, he was too busily employed in shouting his wares to bother with conversational patrons.

Contributing the paper to an industrious street sweeper, also of Greek extraction, Tom moved east in Randolph Street and addressed himself to a taxicab chauffeur leaning idly against his machine and rolling a cigarette.

"Good evening, friend. Won't you have a cigar?"

The chauffeur, patently surprised, accepted the costly perfecto, rolled it between thumb and finger, and held it to his nose, suspiciously. 'Much obliged. But what's de idea—"

Hereon he was interrupted. A man and woman in evening attire, emerging from a glittering café, engaged the taxicab, and Tom saw the trio vanish in the maze of the brilliant thoroughfare.

He next essayed talk with a sandwich man, and next with a chewing-gum peddler, was not encouraged in either case, and then progressed to an adjacent theater where, according to the vari-colored electric bulbs above the gilt entrance, "The Whirly-Girly Revue" was on display.

It was now a trifle past eight o'clock, and the theater rush was at its height. Irresolute, he loitered in the crowded rotunda, mingling with the happy throng, the only one there, it seemed to him, who had no companion. Nobody noticed him. He was more completely ignored than a shipwrecked man on a desert island. He became conscious of an increasing sense of loneliness and disappointment.

Then, abruptly, this feeling disappeared. The crowd had thinned somewhat, and he now beheld, standing alone on its outer edge, a lovely young girl. She was looking his way, as it chanced, and their eyes met, and the first thing he noticed was that her expression reflected a sadness akin to his own. She was not only *alone*—she was *lonesome*.

She promptly averted her eyes, of course, but not before he had remarked how fine they were—large, deep blue, long-lashed, and inexpressibly pure—and how, at the present moment, they seemed overflowing with poignant wistfulness. And then he perceived something else which perturbed him still more: her slim white fingers were moving together in nervous agitation, and the bit of lace they held was twisted into a tight little ball unrecognizable as a handkerchief. Obviously she was in keen distress.

That Tom was pleased thereat denoted no lack of sympathy. He was pleased because he believed he could help her; pleased, too, because he at last had found a person who surely would not spurn his friendly overtures!

He turned and stepped quickly to the box-office window and inquired concerning seats.

The box-office man consulted his files, and flipped two tickets beneath the brass grille.

"Two in the twelfth row's the best I got left. Five dollars, if you want 'em."

Tom wanted them and, plucking from his pocket a bank roll comparable to a yellow Aberdeen turnip, peeled therefrom a five-dollar bill, exchanged it for the tickets, and walked toward the girl, who was now contemplating a 'Whirly-Girly" lithograph, her attitude indicating alien thoughts. She looked up over her shoulder, saw him, and, whether intentionally or not, he never knew, edged away and stood with her back to him.

Approaching, he doffed his straw hat and cleared his throat.

"I hope you will pardon me. I happen to have a pair of tickets—and I thought, maybe—you might—" He stammered into an embarrassed pause. She was looking at him inquiringly and quite unafraid.

"Haven't you made a mistake?' she asked with just a hint of amusement in her eyes, and she stepped forward to greet a stocky young man hurrying in from the street. This person possessed a prominent jaw, a diamond horseshoe stickpin, flashy clothes, and a scowl of singular malice, which he promptly directed in Tom's direction.

Tom conceived an instant dislike for him, and departed swiftly, wondering "how on earth a girl like her could take up with such a rough-neck," with masculine egotism quite forgetting that he had expected a "girl like her" to take up with himself, a perfect stranger! Vigorously destroying his theater tickets, he scattered the fragments underfoot, and looked for a taxicab. Finding none, he started afoot for a street car. His one desire now was to board the next train for home.

His quest had failed, he was sure of that now, and it was a grinding disappointment. He had followed the rules laid down by the master, and all had proved futile. There was no romance in the city, no mystery nor adventure. He wished he [CONTINUED ON PAGE 15]

E-W

"We are advertised by our loving friends"

Mrs. L. E. Highfield writes:

"I certainly recommend Mellin's Food very highly.

"My son was a very delicate baby and owes his young life to Mellin's Food."

Send today for a Free Sample Bottle of Mellin's Food for your baby.

Mellin's Food Company
Boston, Mass.

FERRETS FOR SALE—Either color, any size, singles, pairs or dozen lots. Catalogue free. C. H. KEEFER & CO., GREENWICH, O.

Money-making farms
15 states, $10 an acre up; stock, tools and crops often included to settle quickly. Write for Big Illustrated Catalogue. STROUT FARM AGENCY, Dept. 2699, New York.

PARKER'S HAIR BALSAM
A toilet preparation of merit. Helps to eradicate dandruff. For Restoring Color and Beauty to Gray or Faded Hair. 50c. and $1.00 at Druggists.

Hydraulic Cider Press Profits
Write for FREE Booklet Today
Thirty years' experience enables us to give you all the information you need for cider making.
Also Boilers, Engines, Sawmills.
E. B. VAN ATTA & CO., 118 Penn Ave., Olean, N. Y.

Boy's Box Kite

Boys, here is an opportunity to get a box kite without cost.

This box kite is one of the most popular box kites made. It is simple to adjust and flies easily. It is very light in weight and very large in size. It is a great favorite among boys.

Now that the government is going to build half a billion dollars' worth of aëroplanes, every boy should know something about the conquest of the air. This will teach you of the strange nature of the atmosphere.

The box kite comes carefully packed for shipment. We will send it without cost to any boy or girl who will send us two one-year subscriptions to FARM AND FIRESIDE at 50 cents each. Act now as our supply is limited.

FARM AND FIRESIDE, Springfield, Ohio

Children's Corner

A Beautiful Captive

By Ralph M. Jones

ONE day Frank Clark of Chester, Vermont, killed a doe. He had supposed the doe to be alone, but on approaching he discovered a fawn muzzling the side of its dead mother. Mr. Clark took the fawn home, and, with the permission of the game wardens, brought it up as a family pet. That was nearly two years ago. The fawn is now, as you perceive from the picture, quite a big fellow, and the antlers are beginning to show. He is very happy with his master, and will eat out

of his hand. The children love to play with him. That he has received the best care possible is plain from his good looks and plump sides.

The Growly Bug

By Marjorie Grant

AMY ELLEN was a very small girl who lived on a big farm in the nicest State in the Union. I am not going to tell you which one that is, but if you think a moment perhaps you will know without being told.

Now, most of the time Amy Ellen was very happy, and then no one could ask for a sweeter tempered little child than she. But there were days, sad to say, when her mother said she must have got up out of the wrong side of the bed. Amy Ellen was sure she did not, because, you see, she always got out of exactly the same side of her little cot every day, and on most days it proved to be the *right* side, for she was as sunny as a little girl can be.

Uncle Harry had another explanation for the bad days. Whenever Amy Ellen woke up very peevish, and didn't want to dress, and didn't want to wash her face and hands, and didn't want to eat her breakfast, and didn't want to play—in fact, didn't want to do anything but sulk and cry—Uncle Harry said that the Growly Bug was around.

She had never seen the Growly Bug, but Amy Ellen was very certain that he was an ugly fellow and very disagreeable, and many times on her sunny days she would sit with her chin on her hands and wonder thoughtfully what she could do to get rid of the naughty, mischievous fellow who made her mother and Uncle Harry and Amy Ellen herself so miserable.

SHE also talked it over with Henny Pen, but even that wise fowl could offer no suggestion. Henny Pen, you must know, was Amy Ellen's favorite white hen. She was older than the other chickens, and had vastly more sense than any of them. Amy Ellen loved all the chickens, but she told Henny Pen all her troubles. The wise old hen would look up with her head on one side, and then cluck her answer. You see, she had raised so many little chickens and taught them how to keep from being run over or drowned in the brook or seized by a hawk that she had had a great deal of experience.

One day Amy Ellen woke up very cross. Now, if it had been a rainy day, if the sun hadn't been pouring in at her window, if the robins hadn't been chirping their sweetest, if the flowers hadn't been blooming their brightest, there might have been some excuse for a little girl's waking up cross. As it was, there was no other explanation. Uncle Harry knew it the minute he saw her.

"Aha, the Growly Bug is around again!" he said.

Amy Ellen really loved Uncle Harry very much, but when he said that and stood there smiling at her, she stamped her foot, and ran away to where the chickens were contentedly pecking about the yard. Henny Pen came running up to her, but Amy Ellen was so very cross that she didn't like even cheerful, sensible Henny Pen, and sent the faithful white hen away cackling disappointedly. Just then Amy Ellen's mother came up.

"Uncle Harry's going to drive down to the village this afternoon," she said. "I wonder if you know any little girl who would like to go with him."

"No," answered Amy Ellen sourly, and then was sorry she had said it, because it was great fun to go to town with anyone, and best of all with Uncle Harry. So that made her crosser than ever.

The little girl wandered around for some time trying to find something else that was as cross as she, but on such a beautiful morning that was impossible, and at last she curled up in the swing that stood under the big elm in front of the house, and before long she was fast asleep.

Presently she heard a queer sound and sat bolt upright, staring before her. There on the opposite seat sat the queerest little creature she had ever seen. If you can imagine something that looks like a cross between a large potato bug and a huge mosquito, you will have some idea of what he looked like.

HE WAS fiery red with black spots, and he had the angriest expression possible to any creature. Amy stared at him, and noticed that instead of being smooth like a nice bug he bristled all over.

Suddenly he spoke:

"Get out of this swing, and come with me where you belong."

Amy Ellen was badly frightened, but she managed to ask, "Where do you want me to go?" in a faint voice.

"To Two Sticks, of course," answered the wicked creature.

Then Amy Ellen remembered with a sinking heart that she had often heard her mother say "cross as two sticks," and she thought to herself: "This is the Growly Bug, and Two Sticks is the land where he lives."

Just then the Growly Bug grabbed her with one of his crooked legs and jerked her angrily. Amy Ellen was so frightened that she screamed out, and what should she hear but a fluttering and flapping and cackling—and there was Henny Pen!

Well, the Growly Bug and Henny Pen flew at one another, and such a fight you never saw. First one was on

Amy Ellen loved all the chickens

top and then the other. Feathers flew in every direction. The Growly Bug buzzed and Henny Pen cackled until Amy Ellen wanted to put her fingers in her ears. Around and around they battled, and at last the little girl realized with dismay that poor Henny Pen was giving out. Her strength was going fast, and there was no doubt that in a short time the Growly Bug would make an end of her.

At that thought Amy Ellen grew very miserable.

"It's all my fault for being cross and letting the Growly Bug come around," she said to herself.

And resolved to be dragged off to the land of Two Sticks rather than cost poor Henny Pen her life, she flew at the Growly Bug, crying:

"Get away, Growly Bug! Leave Henny Pen alone! I'm never going to be cross again!"

AND then the oddest thing happened. Growly Bug backed away, and suddenly began to get smaller and smaller. In a minute he was no bigger than a black beetle. Henny Pen ran to him and gobbled him up in a flash.

"What little girl would like to eat some lunch and then go with me to the village?" said a voice beside Amy Ellen, and she woke up and saw Uncle Harry bending over her and Henny Pen pecking around on the seat opposite her.

"I would!" she cried.

"Oho, the Growly Bug's gone!" said Uncle Harry.

"Henny Pen ate him up," answered the little girl thankfully, and Uncle Harry laughed.

Some Queer Trees

1. What tree is Father Neptune's? 2. What one is the saddest tree? 3. What one should humanity fear? 4. What one represents a woeful lover's state? 5. What one is represented by two letters? 6. What one is the schoolboy's dread? 7. What tree signifies victory? 8. What one is an animal? 9. What one reminds us of twins? 10. What one means love? 11. What is the favorite tree? 12, What tree does the college freshman like? 13. What tree does the cat wear? 14. What tree do we take from the furnace? 15. What tree do we like to chew? 16. What tree is an oft-repeated tale?

Compensation

By Helen Shaw

LITTLE girls can't go to war,
But we don't care for that;
We play at being a Red Cross corps,
And doctor Captain Cat.

New Puzzles

Coming to Town

Uncle Reuben and Aunt Cynthia came to town the other day to shop. Reuben bought a suit and hat for $15. Cynthia paid as much for her hat as he did for his suit, and then she invested the remainder of their money in a new dress.

On the return trip, Cynthia, who had been thinking over a remark of Reuben's about her hat costing as much as his suit, called attention to the fact of his hat costing $1 more than her dress, and suggested that if they had portioned their hat money so that her hat would have cost half as much more than his they would each have spent the same amount of money, to which Reuben replied:

"Then how much would my hat have cost?"

Answers to Puzzles

Puzzles Printed Last Issue

Too Much Cheese

The landlady placed 20 cents on the grocer's counter to pay for 1½ pounds of cheese. He cut off a piece weighing 2¼ pounds and she took but half of it, 1⅛ pounds, so that she was entitled to 5 cents change, which she invested in prunes.

The Coachman

By J. R. Gale

PERHAPS you think the coach I drive
Is just my rocking chair,
And that my fiery untamed steed
Is only Teddy Bear.

I don't suppose you know that we
Have traveled many a mile;
And if I told you where we've been
You'd answer with a smile.

But I don't care, this coach of mine
Will carry me all day,
And I am sure my good old horse
Will never run away.

E

For the Wheatless Meal

By Edith C. Armbruster

USE corn and rice here at home and conserve the wheat for the use of our allies and for our own troops across the ocean. These recipes will make the change a delight rather than a sacrifice:

FRENCH BROWN BREAD—Sift together one cupful of rye meal, one cupful of graham flour, one cupful of cornmeal, one teaspoonful of salt, and two teaspoonfuls of baking powder; mix together one cupful of sour cream with three-fourths cupful of molasses, and beat three-fourths teaspoonful of soda into the mixture; add to this two-thirds cupful of water and the dry ingredients, beating all well together. Turn into greased baking-powder cans, filling not more than two thirds full. Steam three hours and then remove from cans and dry in oven about fifteen minutes.

EGG BREAD—Into one pint of boiling water stir one-half pint of white cornmeal, and one-half teaspoonful of salt. Stir briskly for one minute, remove from fire, and add two tablespoonfuls of butter. Beat well, and add four eggs beaten to a froth. Beat the mixture again, then add one cupful of cold milk. Give the mixture one more thorough beating and turn into a greased pudding dish. Bake twenty-five minutes, serving the bread in the same dish in which it is baked.

HOME DEFENSE RAISIN BREAD—Scald one cupful of cornmeal with hot water, enough to moisten it well. Allow it to cool, then add one cupful of sour milk or cream, one-half cupful of molasses, and one teaspoonful of salt. Sift one teaspoonful of baking soda with two cupfuls of graham flour, and stir in with one cupful of seeded raisins. Steam two and one-half hours in a greased and covered mold.

LIBERTY CORN MUFFINS—Scald two cupfuls of milk, into which stir slowly two cupfuls of cornmeal; remove from fire and add two tablespoonfuls of granulated sugar, one tablespoonful of butter, and one-fourth teaspoonful of salt; beat well until smooth and set aside to cool. Beat two eggs until stiff, and when the batter is cool stir them in. Bake in greased gem pans about thirty minutes.

CORN FLAKE KISSES—Beat the whites of two eggs until stiff, and add gradually one cupful of granulated sugar. Beat well, then add two cupfuls of corn flakes, one teaspoonful of vanilla, and one cupful of shredded cocoanut. Drop by teaspoonfuls on oiled paper, and bake in a moderate oven.

SNOWDRIFT PUDDING—Rub through a sieve one-half cupful of steamed rice. Dissolve one tablespoonful of gelatin in one-fourth cupful of cold water, let it stand fifteen miutes, then fill up cup with boiling water. Add the rice, one teaspoonful of vanilla, three-fourths cupful of sugar, and one-fourth cupful of hot water. Stir well, then set aside to cool. When the mixture begins to thicken fold in the whites of two eggs, beaten to a stiff froth. Set aside to chill. Serve with cream.

WARTIME PUDDING—Mix together one cupful of sour milk, one beaten egg, one cupful of maple or corn syrup, one tablespoonful of soft butter, one teaspoonful of soda, one teaspoonful each of cinnamon and allspice, one and one-half cupfuls of graham flour, and one cupful of seeded raisins. Steam three hours and serve with sauce.

BROWNED RICE SLICES—Cook one cupful of rice with three cupfuls of milk in a double boiler until soft. Season with one teaspoonful of salt and one tablespoonful of butter. Pack it closely in a small bread pan. When cold, cut it in one-half-inch slices, and brown them delicately in hot butter or drippings.

Little Points in Canning

By Cecelia Sharp

KEEP the water at a jumping boil and do not allow the fire to die down for an instant while cans are in the canner.

Keep the cover on the canner during every moment of the processing time. Steam plays a large part in cooking the contents of the can.

Greens or green vegetables are most satisfactorily blanched in steam instead of hot water. Use a steam cooker or put the products in a colander and set them over a vessel of boiling water, covered as tightly as possible.

Most products packed in glass jars will bleach or darken in color when exposed to light. To prevent this, wrap the jars in paper.

Examine jars and cans occasionally during the summer to detect any sign of fermentation, leaking, or swelling.

The flavor is often injured by letting peeled fruit stand too long before cooking. Prepare at one time only as many cans as can be processed immediately.

In seasoning it should be kept in mind that most vegetables, as well as meats, are injured in flavor by an excessive use of salt in the canning process. A little salt is very palatable, but it is better to add no salt in canning than to use too much. It can be added to suit the taste when the canned products are served.

Mold may develop on canned goods if the seal is defective, if after sterilizing the tops are removed from the jars to replace the rubber rings, and if the jars are kept in a damp place where the rubbers may decompose.

Midsummer Comfort

For Mother and the Children

HOW TO ORDER: Send the correct amount, in stamps, with your name and address and pattern numbers clearly written, to Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

No. 3302—Blouse with Buttoned-Back Collar. 34 to 42 bust. Price of pattern fourteen cents

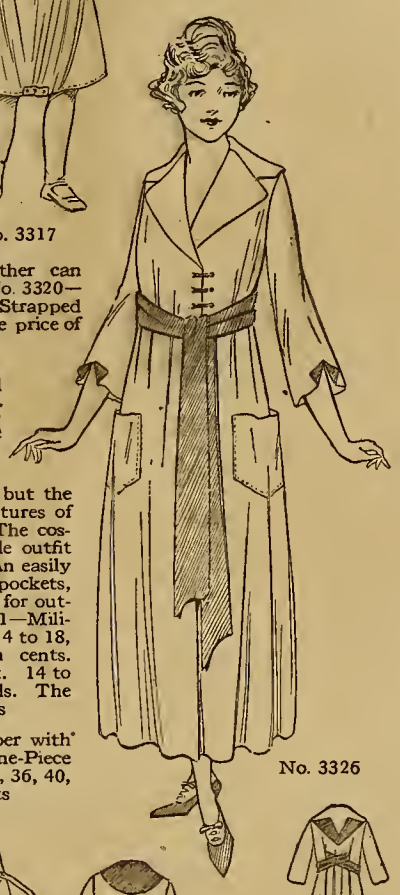
No. 3320

No. 3317

Patriotism does not go by ages, for even the youngsters are clad in patriotic fashion these days. Here is an outfit to delight the small boy. No. 3317—Envelope Rompers with Bonnet (including transfer pattern for patriotic design). 1, 2, and 4 years. Price, twenty cents

The most inexperienced mother can make this simple little frock. No. 3320—Child's Dress with Novelty Strapped Collar. 2, 4, and 6 years. The price of this pattern is fourteen cents

No. 3331



No. 3326

GUIDE charts and full directions for using make our patterns the simplest and best.

The military craze is everywhere, but the wise woman uses only the best features of it, and does not follow extremes. The costume on the left shows the sensible outfit with a smart military suggestion. An easily adjusted blouse, comfortable patch pockets, and a short, loose skirt make it ideal for outdoor work, camping, etc. No. 3331—Military Blouse, High or Low Neck. 14 to 18, 36 to 44 bust. Pattern, fourteen cents. No. 3332—Two-Piece Military Skirt. 14 to 18, 26 to 34 waist. Width, two yards. The price of this pattern is fourteen cents

To the right is a serviceable wrapper with good style features. No. 3326—One-Piece Wrapper with or without Sash. 32, 36, 40, and 44 bust. Pattern, fourteen cents

No. 3331
No. 3332

No. 3320

No. 3317

Showing the cap of No. 3317 laid out flat

No. 3302

No. 3326

Copyright, 1917, by The Crowell Publishing Company

Caring for Your Refrigerator

By Mrs. Emily H. West

NOTHING about the house should be given more scrupulous care than the refrigerator in which food is kept. Every part of the refrigerator should be thoroughly cleaned at least once a week. Food should be watched, and if anything has been allowed to get the slightest taint or mold it should be removed immediately. If anything is spilled or rubbed on the walls, it should be wiped up at once. An untidy nook for food is always disagreeable and sometimes dangerous.

The escape pipe of a refrigerator should be thoroughly cleaned throughout its entire length very frequently, or it will accumulate a slimy lining in which decay germs, likely to spoil the food, may flourish. To clean the pipe use a brush with a long wire handle or swab with a cloth wrapped tightly around a long stick. Washing soda dissolved in boiling water and poured down the escape pipe once a week is very effective.

Of course, the pan under the refrigerator should be thoroughly scalded and cleaned every week also. Sometimes otherwise careful housekeepers pay no attention to where the escape pipe leads. It must open into pure air. Milk and moist food cannot keep well even in a refrigerator if the escape pipe opens into a hole in the cellar floor, for example, or anywhere except into the clean pure air.

Glass and stone jars and deep earthen plates are the best vessels in which to put away foods in a refrigerator. Milk and butter absorb odors so easily that they should be kept in a separate compartment from other foods.

Storing Dried Foods

By Marion Ward

DRIED products should be carefully stored in both moisture and insect proof containers in a dry place, according to C. D. Matthews, assistant horticulturist of the State College of North Carolina. Any form of tin container with a tight cover is satisfactory. Fruit jars may be used, but owing to the present shortage other containers should be chosen if possible. The cheapest is a paper bag. Small paper bags should be used, and only a quantity of the dried fruits or vegetables sufficient for a few meals should be put in each bag. The bag should be tied and given a coat of paraffin.

The Sealed Room

[CONTINUED FROM PAGE 13]

was home with Yocum, if for no other reason than to burn the "Trimmed Lamp."

A street car rattled to a stop at the corner. He climbed aboard; and a minute later he was being jolted noisily along North Clark Street.

Meanwhile, the Girl with the Wistful Eyes and her escort had not moved from the spot where Tom had left them—and the curtain was up on the first act, too.

Both were clearly perturbed about something. The sporty young man was talking loudly, harshly, garnishing his speech with slang and stressing it with violent gestures. He seemed fairly bursting with indignant protest. Her voice, mingling with his, was soft, low-toned and gentle, and her slender hand, touching his sleeve, was eloquent with tender appeal. She looked beseechingly into his wrathful face, entreating him to do a thing which he, apparently, had no intention of doing.

"I tell you I won't!" he blustered, jerking his arm away. "You must think I'm crazy—"

"Listen, Frank—"

"Listen, nothing! We're missin' the best part o' the show. Comin' in, or ain't you?"

"Frank, won't you please—"

"*No*, I tell you—*no!* You can stay here if you want to. I'm goin' in." And he swung on his heel and strode inside the theater.

She took a faltering step after him, her hand outflung in hopeless entreaty, then stopped, her shoulders drooping, and watched him go from her; and then, as she at last realized that he was not coming back, her wistful eyes filled suddenly with tears of regret, and shame, and self-pity. Excepting a policeman, leaning against the box-office window and surveying her with tepid curiosity, she was quite alone in the rotunda; but she had the feeling that a million eyes were staring at her—a deserted, humiliated girl. And, panic-struck, she turned and fled to the street. In a few moments she was on a north-bound street car, traveling the selfsame route taken by Tom, not ten minutes ago.

[CONTINUED IN NEXT ISSUE]

Canada Leads Us Marketing

[CONTINUED FROM PAGE 3]

the goods carrying their individual brands suffered by depreciation in quality.

"But how would the same system work out in this country?" someone asks. Convenience of the members composing the associations to the storage plants is the most important consideration. Prince Edward Island is about the size of Delaware, and smaller than single counties in many Western States. A plant of 150,000 cubic feet capacity, costing $50,000, accommodates Prince Edward Island farmers. The four plants in Nova Scotia have an aggregate capacity of 700,000 cubic feet of storage to accommodate an area about as large as Ohio. The larger provinces, like Ontario, have their storage plants so distributed as to take care of the heaviest producing districts, so that all of the fruit and dairy farmers have storage accommodations within fairly convenient reach. Based on a comparison of population, the United States would have to have nearly 500 cold-storage warehouses, costing not far from $70,000,000, and 12,000 creameries with cooling systems. Our government expenditure for a 30 per cent payment required would be as nothing compared with some of the war-revenue measures and for public works now being assumed without hesitation.

I CAN'T conceive of any disinterested person opposing the adoption of a plan for insuring better quality and more stable production of food supplies, and thus helping both producers and consumers by means of some certain plan of government aid in marketing, for without economic response in the distribution of our food supplies there must come increasing hardship to the American people. There is another important angle to this matter also. The effect of the Government's assuming a portion of the cost of construction of these storage plants means more than merely supplying a share of the capital. It also insures a direct interest and obligation on the part of the Government in assisting in the distribution and marketing of farm products under fair conditions. Take for example last winter's experience. Consumers would not have been paying 40 to 45 cents a pound for storage butter for which the dairyman receives only 22 to 25 cents, and storage eggs selling from 35 to 50 cents a dozen which cost the buyers for private storage not more than 20 cents a few months earlier.

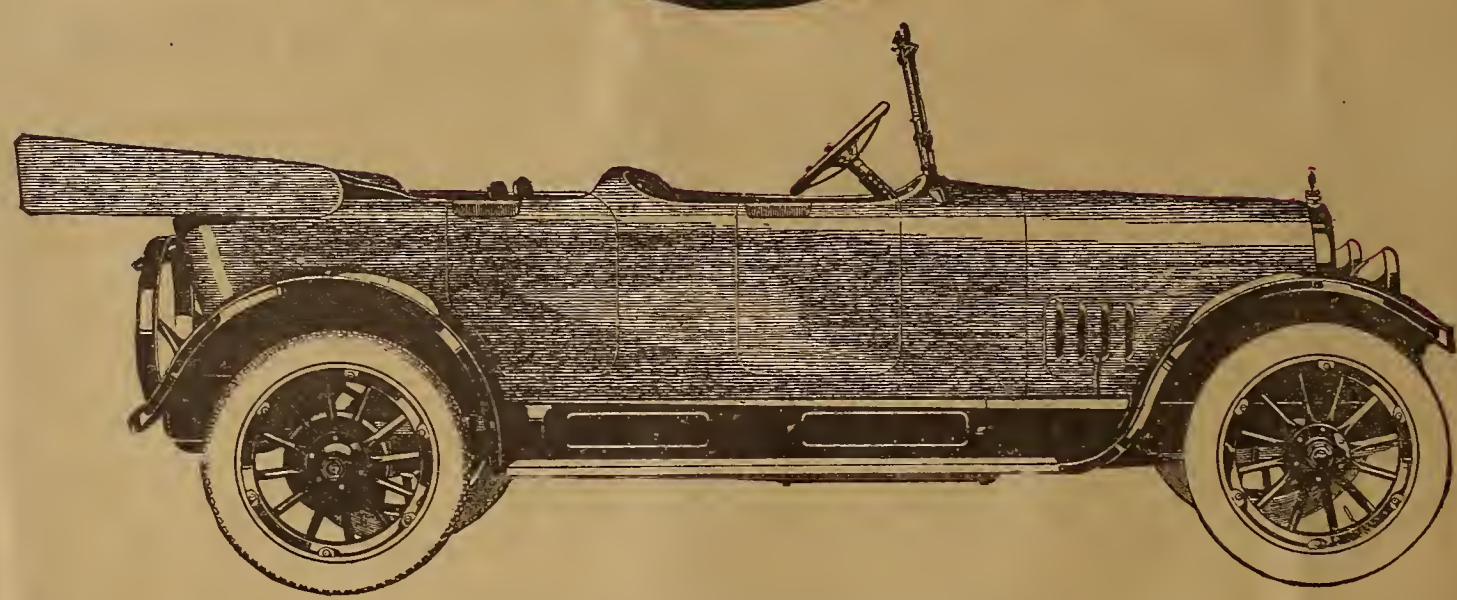
Farmers and consumers of farm products will never be mutually benefited by a better system of marketing until the unnecessary absorbers of their incomes are barred from the channel by which the farm products reach the consumer.

So long as these big hordes of private storage men, hundreds of commission men, jobbers, wholesalers, and retailers are constantly adding to the cost of farm products, where dozens or scores of these middlemen easily could do this service, how can the cost of living be anything but exorbitant? With cooperative storage, together with selling and buying associations and state-controlled auction sales in the large centers of population, our great world-feeding industry can be placed on an economic and satisfactory basis.

Seven Passenger

$1295

f. o. b. Toledo—Subject to change without notice



A New Wonderfully Balanced Six

Sturdy Light Weight—Abundant Power

This announces a brand new development in Sixes.

Here it is at last!

A popular priced *Light* Six with *weight and power in scientific balance.*

Think what that means.

Economy and durability in combination with six cylinder advantages at last an accomplished fact.

Don't ask any more why you can't get a durable light weight six with real six cylinder performance.

You can—it's this new Willys Six.

By scientific designing with the aid of our great experience in building Sixes, we have produced a *lighter car* without sacrificing sturdiness.

Its forty-five horsepower motor combined with its light weight, makes it a wonderful performer.

Quick as a flash on the getaway; speedy; surprisingly economical, yet with worlds of power and the sturdiness to support it.

Think what this means figured
—in greater gasoline economy
—in additional tire mileage
—in an easier car to handle.

Now let the Willys-Overland dealer demonstrate the wonderful performance of the New Willys Six—we want you to sense what this new balance between power and weight means in an economical, durable light Six.

We want you to know, too, what a wonder the New Willys Six is from the standpoint of easy riding and easy handling.

Also we want you to know what a beautiful car it is—long, sweeping graceful lines—one of the year's most advanced models—a perfect beauty.

And the price!—$1295 complete!

It's the Six you've longed for—go in and see it now—before our dealers are loaded with orders for more Willys Sixes than they can get.

Motor 3½-inch x 5¼-inch
45 horsepower
4½-inch tires

120-inch wheelbase
7-passenger capacity
Finished in olive green

Catalogue on request. Please address Dept. 1144

Willys-Overland, Inc., Toledo, Ohio

Willys-Knight and Overland Motor Cars and Light Commercial Cars

More Than 600,000 Copies Each Issue

LIBRARY
RECEIVED
AUG 13 1917
U. S. Department of Agriculture

FARM and FIRESIDE

The National Farm Paper - Twice a Month

ESTABLISHED 1877

5 cents a copy

Saturday, August 18, 1917

Western Edition

RECEIVED
AUG 13 1917
U. S. DEPARTMENT OF AGRICULTURE
OFFICE OF SECRETARY

PHOTOGRAPH BY JOHN KABEL

Pitching for the Allies' League

THE HUBER Light Four

Harness These Sinews of Steel

POWER that will plow an acre every hour, day and night! Power to operate your farm machinery whenever and wherever needed! Power to pull a heavy load faster than you could haul a light load with horses!

In black soil or clay, on hillsides or in the bottoms, the Huber plows, discs and harrows. It increases your crops by producing a better seed bed. It increases your earnings by reducing man and horse labor in preparing soil and harvesting crops.

A leader in the 5000 lb. class. Four cylinder Waukesha motor. Direct drive on draw-bar or belt. 12 H.P. at draw-bar, 25 H.P. at belt. Pulls three bottoms. Hyatt roller bearings. Perfex radiator. Center draft. Short turn. Self-steering in the furrow.

It's speedy—2½ miles with plow and 4 miles on the road. Does the work of a dozen horses. Built by a concern with 40 years' experience in the manufacture of tractors and farming machinery.

Write today for complete literature.

The Huber Mfg. Co.
352 Center St. Marion, Ohio
Branches in Principal Agricultural Centers

CARBON REMOVED 5½¢ Per Cylinder

FOR AUTOMOBILES, TRUCKS, TRACTORS

Worko works while your engine works. Completely cleans carbon from cylinders, valves, spark plugs, combustion chamber. Costs only 5½c per cylinder. Cheaper, easier, safer than scraping. Easier to apply than liquid. No waste, no waiting, no *work*. Worko tablets form gas which loosens carbon and blows it out through exhaust. Fully guaranteed. On market six years. Box of 24, $1.00; box 72 tablets, $2.00. Order from us if not in your dealer's catalog. Insist upon genuine Worko: accept no substitutes.

THE WORKO CO., Dept. 80, Racine, Wis.

WORKO TRADE MARK REGISTERED

There are genuine Victrolas in great variety of styles to suit every home.

Write to us for the handsome illustrated Victor catalogs, and the name and address of nearest Victor dealer.

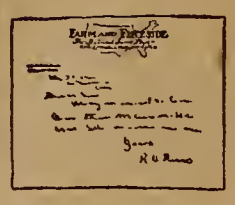
Victor Talking Machine Co.
Camden, N. J.

Victrola IX

Other styles $15 to $400

The Editor's Letter

An Unwise Tax on Farmers' Reading Matter



IN THE Western cow country some years ago there lived a fiddler whose knowledge of music, being self-acquired, was rather meager. But there were no other fiddlers for miles around, consequently he was regularly called upon to furnish music for the ranch dances. When in time he became slightly deaf, he took the precaution to display a sign which read: "Don't shoot the fiddler. He's doing the best he knows how."

As this issue of FARM AND FIRESIDE goes to press, Congress is still struggling with the War Revenue Bill and is doing the best it knows how. But it contains some measures having discordant notes. The Revenue Bill is a new kind of fiddling to even our most experienced statesmen, and I want to urge you to keep a close watch on developments.

This bill is now past the House of Representatives, and I want to call your attention to one portion of it especially. From personal experience I am sure that every family living on a rural route values its reading matter, and the mail carrier is watched for eagerly. The abolishment of rural free delivery is unthinkable even as a war economy, and any lawmaker who even suggested it would commit political suicide.

We all know furthermore that a good share of the mail left in the average rural box consists of newspapers, magazines, and farm papers, all of which is known in post-office parlance as "second-class matter."

Back in 1885 Congress gave the American people a cent a pound rate on their reading matter, and as a result of this rate 95 per cent of the periodicals that farmers read has come into being. And as a further result of it, the public generally gets its current reading matter at such a low price that most people wonder how it is possible.

But now as a war revenue measure Congress proposes to put farm papers and other magazines under a zone system and increase the postage rate on them to as high as six cents a pound for the farthest zone. The average rate will be somewhere around 3.2 cents per pound, or a 320 per cent increase over the present rate. Nor would the House of Representatives permit a hearing on this matter in spite of the warning that the proposed action would discriminate against people living in rural districts.

The farmers of the country will be the first class of people affected by such a change, for the publisher will, if necessary, have to charge a higher price for his paper to meet this enormous increase in postage.

The publishing business is perfectly willing to pay war taxes from its earnings, even to the whole of its net earnings if that much is asked. And this is in spite of the fact that the printing industry has rather suffered from the war. Labor is much higher, paper has advanced 75 per cent, while ink, type metal, and new machinery average about 90 per cent higher.

NATURALLY, you wish to know how you will be affected, and I can best answer that question by giving a few figures presented to the Senate Committee on Finance. As conditions are now, under the one cent per pound rate you pay no postage on your newspapers and magazines.

The publisher pays the postage, and has done so for a good many years. You pay freight and express charges on other commodities, but your reading matter always comes prepaid. Last year publishers paid the Government $11,000,000 for carrying the second-class mails, which is a good revenue figure to start from.

The large amount of reading matter that papers like FARM AND FIRESIDE are able to give their readers is in a way dependent upon the amount of advertising published with it. Some people have the false idea that this advertising benefits the publisher only. As a matter of fact, in addition to the great service it renders the readers the advertisements are profitable to the Government because of the amount of letter-writing and parcel-post carrying they bring about. Letter postage and parcel postage are very profitable to the Government. For instance, a single-column advertisement appearing in one magazine brought orders requiring $5,460 worth of stamps to send out the merchandise and for writing to customers.

A monthly magazine which kept a record of the postage on the letter and post-card mail found that it amounted to seven times the amount of pound-rate postage. And in addition to that, every subscriber who wrote to an advertiser for samples or information, or sent a clipping to a friend, added still more to the earnings of the Post-Office Department. The income account of the Post-Office Department over a period of thirty-two years has always shown good results when the volume of second-class mail was large.

SO FROM a purely business standpoint the case is very much like killing the goose that laid the golden egg. The publishing business is the fowl, and the Revenue Bill is not a tax but an ax. The reading public is the family of the man that owned the goose.

If the bill becomes a law, the first result will be a sharp rise in the price of newspapers and periodical literature.

Nowadays, as you all know, one of the large sources of revenue in the publishing business is the advertising. And do you realize, by the way, just how valuable the advertising columns of FARM AND FIRESIDE are to you? Advertising is the modern method of bringing the manufacturer and the user together.

Well, if Congress should decide to increase the postage on your reading matter, the publisher would have to increase the price of the paper, a thing which he distinctly does not want to do, but which may be forced upon him unless the farmers of the country send such a protest to Washington as to make Congress take notice. A higher price for periodicals would mean a smaller revenue for the Government, because the volume of business would be bound to shrink, and as a result the money needed for revenue would have to be collected by direct taxation.

I related this situation the other day to a farmer who lives near me, and who takes several newspapers and half a dozen magazines. He listened attentively, but was indifferent, and I am sure he has forgotten about it by now. I think that most of us have the habit of considering affairs at Washington as remote from things at home, but that, my friends, is where you are mistaken. In wartime, especially, it doesn't take long for you to feel the effect of what your representatives do at the Capitol.

Taking everything into consideration and considering the interests of the country at large, I am sure that raising postage rates would have an effect just opposite to the results that Congress hoped for. And I hope you think so too, and feel strongly enough on the subject to take a hand in the matter.

Now, if you should start to Washington to-day and try to see your Congressman he would probably be busy and you would have to wait a long time, possibly several days, before some dapper secretary would let you see him. But a letter will reach him quickly if it contains your opinion on pending legislation. Write a letter which truly represents yourself and which he will be proud to read at the committee meetings as showing the interest his constituents take in national legislation. A firm but friendly statement of your opinions and how you desire him to vote will do a thousand times as much good as a bullying demand.

Congressmen are loaded with work and haven't time to think out all the details and possible effects, but they will always listen to the voice of the voters. The proposed legislation does not go so far as to abolish rural delivery, but it is dangerously close to it in the ultimate effects. It will raise the price and reduce the amount of farmers' reading matter; and if there is anything more pitiable than an empty flour bin it is an empty mail box.

The Editor

Patriotism Demands Protection Against Losses by Cholera

It has long been a mystery to me why so many swine raisers will sit calmly by and accept a visitation of hog cholera as a sort of "necessary evil" instead of taking advantage of the full protection which is insured by the use of pure, potent, refined and heated serum.

Is it not clearly the part of good business principles to protect your herds with the best available product?

If you specify Mulford Refined Hog Cholera Serum, you may be assured that your veterinarian can quickly obtain it, and with its use, both you and your veterinarian may rest secure in the assurance that you have done all that is humanly possible for the protection of your herd.

The H. K. Mulford Company discovered and perfected the process of refining and sterilizing hog cholera serum, more than a year ago. Later, the Bureau of Animal Industry, made the important discovery that heating serum to 60° C. would destroy the germ of foot-and-mouth disease, and strongly recommended that all serum producers make use of the discovery. The Mulford Company at once included the heating process in the manufacture of their serum.

Much importance should be attributed to the fact that the Mulford Refined Hog Cholera Serum contains no inert material, which so frequently causes cysts. Removal of all the inert material from the "crude" serum leaves a clear, amber-colored serum, about the consistency of water. Is it not to be expected that a serum of this kind will be much more quickly absorbed and assimilated than the thick, turbid, glutinous product which we have heretofore been forced to use?

There is no reason for accepting a substitute. Insist upon the administration of 100% Potent, Sterile, Clear and Heated Serum, Mulford's.

H. T. Morgan.

Mulford Refined Hog Cholera Serum

The only 100% Potent, Sterile (germ-free), Clear, Heated Hog Cholera Serum

Send for free booklet No. 28

H. K. MULFORD COMPANY
Philadelphia, U. S. A.

GET A WITTE "KERO-OIL" ENGINE

Save $15 to $200

Have More Power—Do your work easier—Get a better engine—At less cost—Make more money—Save more fuel—Immediate Shipment—No waiting—Five-Year Guarantee—90-Day Trial—Hundreds of engines—2 to 22 H-P.—all styles—Ready to Ship—Suit yourself as to terms—Cash—or Payments—or NO MONEY DOWN if arranged for. Write for latest book—(copyrighted)—"How to Judge Engines"—and latest wholesale factory prices—Direct. I ship everywhere in the U. S.—guarantee safe delivery—Save you $15 to $200—make you the best price. I ship big engines—or small engines—on wire orders.—ED. H. WITTE, Pres.

WITTE ENGINE WORKS
2061 Oakland Ave., Kansas City, Mo.
2061 Empire Bldg., Pittsburg, Pa.

SPLIT HICKORY AFTER HARVEST

Special Prices!

If you need a buggy or harness this fall or next spring, I'll save you $20 to $40 if you buy NOW. You won't have another chance to buy as low as my "After Harvest Prices" which I am quoting for a limited time. Write today for

My Big New Catalog FREE

and see for yourself the money you can save. Look over the 150 nifty styles. SPLIT HICKORY Buggies are famous the world over. Sold on 30 Days' FREE Road Test—2 Year Guarantee. Don't miss this opportunity to get a genuine Split Hickory at a big saving. Write for catalog and price list now.

H. C. PHELPS, Pres.
The Ohio Carriage Mfg. Co.
Station 23
Columbus, O.

FARM and FIRESIDE

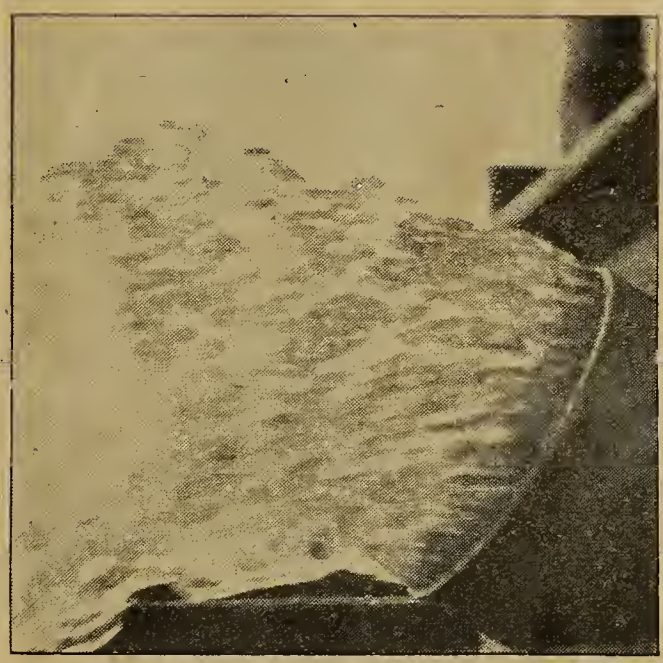
Published Twice a Month by THE CROWELL PUBLISHING COMPANY, Springfield, Ohio
Copyright 1917 by The Crowell Publishing Company
Vol. 40 Springfield, Ohio, Saturday, August 18, 1917 No. 22

Irrigation From Wells

Alfalfa Growers in Kansas Make Good Use of Underground Water

By RAY YARNELL

Portion of the first of the five cuttings of alfalfa on the Lough ranch



Discharge from a centrifugal pump having a capacity of 3,500 gallons per minute

Last year's fifth cutting of alfalfa made possible by well irrigation

WITHOUT a river, and having only two small creeks, Scott County, Kansas, today represents the realization of the dream nursed by Western Kansas farmers for the last quarter of a century—successful irrigation. Scott County is the third county from the western line of the State in the middle tier, almost exactly half way between the north and south lines. It is in the semi-arid region of the State, where the rainfall is variable.

The supply of surface water is lacking, but the underground streams have been successfully and economically tapped, and the results achieved lead to interesting conjectures regarding the future of irrigation in Kansas.

Development of irrigation plants in Scott County so far has been confined to individual effort. No concerted plan has been evolved or is at present being considered. But the success of three farmers, each of whom has used a different method in achieving the same results, has led other farmers to consider similar undertakings.

J. W. Lough, state irrigation commissioner, has built up the most pretentious plant to water his land. It is not yet complete, but when finished it will represent an expenditure of $50,000. Already it is in operation and this year's crops vouch for its success.

Mr. Lough uses oil engines to operate his pumps, of which, when his plant is finished, he will have eight. Each pump lifts water from a cluster of seven wells. The central well, in which the pump is located, is larger than the other six, three of which are on each side. The wells are connected at the upper water line by a tunnel, about ten rods long, in which a 12-inch water main is laid. From this main a pipe drops down through the water-bearing gravel in each of the wells.

The pump is attached to the upper side of this main in the central well and draws the water from the group. It has a capacity of 3,500 gallons a minute. The eight pumps raise a total of 28,000 gallons of water every minute, and produce such a volume and at such speed that it can be conducted a distance of five miles in open ditches with a small per cent of loss from seepage.

This volume of water will irrigate 16 acres every hour, or 320 acres every twenty-four hours. There are 5,000 acres in the Lough ranch, and it can be irrigated once every two weeks. Mr. Lough has found that one irrigation will produce a crop of alfalfa.

Here is what Mr. Lough has to say about irrigation in western Kansas:

"Irrigation makes farming a success in western Kansas. Any place where the water can be had we can raise wheat and receive 40 to 50 bushels per acre; milo, 80 to 100 bushels; Indian corn, 70 to 80 bushels; potatoes, 100 bushels; alfalfa, 7 tons of fine quality.

"On one acre of irrigated alfalfa eight brood sows and their pigs, while sucking, can be grazed. One acre will pasture 10 hogs that will weigh 250 pounds each.

Over Eight Tons of Hay per Acre

"THE cost of irrigating, harvesting, and stacking alfalfa on one acre of ground is about $15. The hay is worth $10 to $12 a ton. With a yield of 6 to 7 tons per acre, the total yield would be worth $60 or $70, and the net yield, aside from grazing, would be $45 to $55 an acre.

"Alfalfa must be sown thick. This gives it the quality, and the water we turn on it gives it the quantity. What is true of alfalfa is also true of all kinds of garden truck."

On a test field Mr. Lough got five cuttings of alfalfa last season, and the total yield per acre was 8.2 tons. The cost of irrigating the field, cutting and stacking the crop was $15 an acre. The price he was offered for the hay was $12 a ton. On those figures he had a clear profit of almost 7 tons—to be exact, 6.95 tons. At $12 a ton this would be worth $83.40.

Several other Scott County farmers have irrigation plants on a smaller scale than that undertaken and developed by Mr. Lough.

Fred Mahler uses another system in irrigation, and his plant is built on a smaller scale. Mahler draws his power from the wind. He irrigates 50 acres of alfalfa. His plant consists of a steel storage reservoir surrounded by ten ordinary windmills. The mills have 10-foot wheels and the water is lifted from a depth of 30 feet. His entire outfit cost $1,600.

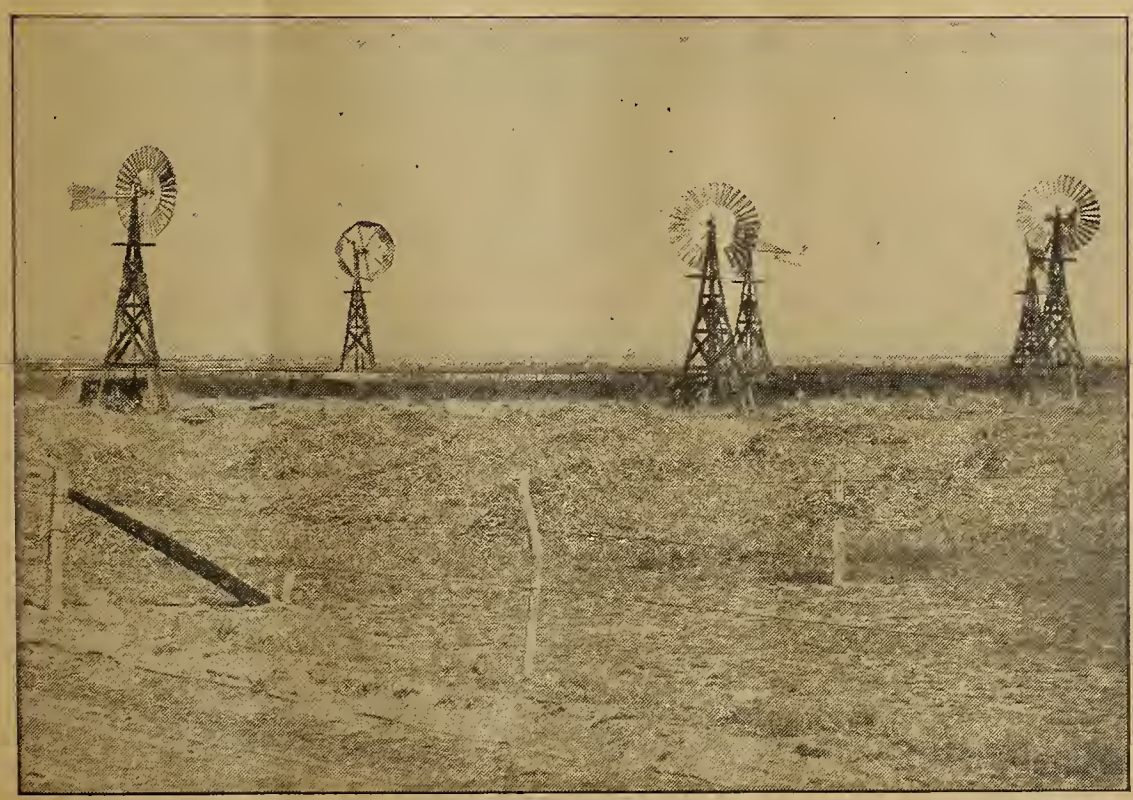
The wells on the Lough farm are four feet in diameter, and are dug. A 36-inch casing, made of boiler steel, is sunk. Sand buckets are used inside this casing and a boring machine is used to penetrate the clay strata. Later a 29-inch casing is sunk, and finally a 24-inch steel casing, ending in a screen, completes the well. The outside casings then are withdrawn and the space about the 24-inch casings is filled with sand and gravel.

The average cost of digging the wells, including labor and casings, is $10 a foot. The expense is divided about equally between labor and casings, $5 being allowed for each per foot. The wells have a depth of between 30 and 40 feet, making the cost of a well between $300 and $400.

Although water is frequently found at depths under 40 feet, the strongest flow is encountered at that or a slightly greater depth, and Mr. Lough declares it pays to stand the extra expense and tap a flow that will not fail.

A centrifugal pump is used. They now cost $700 where before the war they could be bought for $500.

Figured in terms of gasoline and oil for the engines which run the pumps, it costs seven gallons and one pint of fuel oil and a half pint of lubricating oil to pump an hour. He has never been able to pump enough to diminish appreciably the supply of ground water.



These windmills pump water from a depth of 30 feet into a reservoir which irrigates 50 acres of alfalfa. The outfit cost $1,600

EW

Culverts of Concrete

Bridge the Farm Streams and Ditches Now While Water is Low

By ALFRED R. WILLIAMS

"HIND wheels in the ditch!" How familiar are these words to many a farmer. Perhaps it is at threshing time. The threshing outfit is on the way to his farm. His extra men are hired and waiting for the work to begin. The thresher leaves the public road and is in the lane on the way to his grain stacks. Crash! An old wooden bridge over a ditch gives way. You know the rest.

To the farmer who wants to avoid just such occurrences in the future, and to other farmers who would guard against them, a few suggestions as to the proper kind of bridges and culverts to build on the farm may be of value. The discussion will be confined to small culverts, such as those spanning ditches and roadway drains, and to those which can be built by the farmer himself who does not have an extensive knowledge of concrete construction.

The box culvert is the best for use in a level country, and for spanning ditches of the size usually found on farms. The box culvert requires less excavation, and the forms are simpler and easier to construct than those for arch culverts.

A culvert 12 feet long will generally be about the right length for most roadways on the farm. It is not necessary to build the culvert longer in order to allow wagons to pass each other, as would be the case on public highways. A waterway or opening of 3x3 feet will accommodate the flow of most any farm stream or ditch. Often this size of waterway can be reduced to 2x2 feet, the same methods of construction being used, and with the use of less material.

Excavation for the footings should be carried down to a firm foundation in all cases. Generally 18 inches below the top of the floor of the culvert will be far enough. The styles shown on this page have been figured on this basis. Owing to the batter or slope of the side walls, it will not be practicable to have the earth serve as one side of the forms, even where this is possible. The floor of the culvert may, however, be laid directly upon the earth, if it is firm and smooth.

Old lumber lying about the farm may be easily used for the forms, provided that it is not warped and contains no knot holes. Since most of the culvert is in contact with the earth, it is not essential that the outer surface be finished smoothly. The inside of the culvert, or the waterway, should be reasonably smooth, a condition secured by using smooth lumber for the inside forms.

If there are several of these culverts to be built on the farm, the same forms may be used for all of them, thus lessening the cost of each culvert.

I will not go into the details of proportioning, mixing, and pouring the concrete, since all of the cement companies issue booklets which take up these various points. These booklets are free for the asking.

Good Test for Quality of Sand

IN a general way, the proper mixture of concrete for the box culvert under discussion is: For the side and wing walls, 1:2½:5; for the top slab, 1:2:4. This means 1 part by volume of cement to 2½ parts of sand, and 5 parts of crushed stone or good gravel. The quantities should be mixed thoroughly while dry, the water added and again mixed thoroughly. Sufficient water should be added to give a jelly-like consistency when placed in the forms.

Many farmers have a gravel or sand bank on or near their farms from which they can get their supply of these materials. This of course lessens the cost of the work. Care must be taken that the gravel, and especially the sand used, is free from silt or clay, as this reduces the strength of the concrete. To ascertain the amount of silt and clay, a glass jar may be half filled with the material and water added until the jar is nearly full. After a vigorous shaking, if the water appears very muddy and there is a layer of mud on top of the sand and gravel, it will be best to screen all of the material used, and to wash the sand before using. This will usually remove the excess of silt and clay.

Half-inch soft steel reinforcing rods, which are recommended to be used in all culverts of this type, should be placed in the forms before pouring the concrete. These rods may be held in place by means of small wires fastened to the outside of the forms by passing through holes bored in the side forms. These holes should be no larger than the wires themselves. The position of the bars is close to the under side of the top slab. They are placed six inches apart the entire length of the top. The rods must be free from grease, dirt, or rust, as the presence of any of these on the steel will prevent proper bonding of the steel and concrete.

The tendency of concrete under certain conditions to split and crack after a season's use is well known. Many farmers refuse to have anything to do with concrete structures for this reason. Much of this cracking and shifting of parts of the structure is due to the action of water pressure, and particularly frost action. Water will collect next to the structure where no provision has been made for its removal. Later the ground freezes, and the structure is pushed out of place and often ruined. To prevent this, a four-inch tile drain is placed in both wing walls and in the middle of the side walls, about six inches above the bottom of the floor.

Many otherwise properly constructed culverts have been ruined by removing the forms too soon. The outside forms may usually be removed in two or three days, but the forms supporting the top should not be taken out for at least two weeks. A longer time is better. This length of time is necessary in order for the concrete to "cure" at least partly after it has set. At least three months should be given the concrete to cure properly before subjecting the culvert to very heavy loads, such as traction engines. The top of the culvert should be covered with a layer of earth to prevent too rapid drying, and to act as a protection to the concrete from the action of the vehicles passing over it.

With the provision made for drainage the concrete need not be water-proofed. Commercial water-proofing compounds are not recommended because they are likely to weaken the concrete. But if you desire to use a water-proofing agent, here is one, known as Cunningham's mixture, which is quite satisfactory. This mixture is made by heating thin coal tar of a cheap grade to boiling. To each bucketful of tar is added one-eighth bucketful of kerosene and one-eighth bucketful of neat cement. This mixture is applied with a brush to the concrete, and will penetrate to a depth of one to three inches and thoroughly water-proof it.

The following is a list of materials needed for the construction of a culvert 12 feet long, with wing walls sloping outward at an angle of 30 degrees from the center line of the culvert proper.

Cement	58.8 sacks
Sand	5.2 cubic yards
Gravel or crushed stone	10.4 cubic yards
Lumber for forms	400 linear feet 2x12-inch plank
Lumber for centering	110 linear feet 2x4-inch pieces
Approximately 80 linear feet of old 2x4 or 2x6-inch for inclined bracing of forms at the sides.	

No absolute estimate of the cost can be given, since the sand and gravel are a large item if they have to be purchased. When both of these materials can be obtained on the farm for the cost of hauling, and old lumber used for forms, such a culvert can be built at a cost of about $50. Surely this is a good investment, considering the permanence of the work and the satisfaction to the farmer of knowing that his culvert is strong enough to bear up any heavy machinery, including tractors, that he may have occasion to use on his farm.

The waterway opening in this culvert measures 2x2 feet, which is ample for most farm ditches

Large Crew Unnecessary

AUGUST and September are perhaps the best time to do work of this kind. There is comparatively little water in the ground, and streams and ditches are usually at about their lowest point during these months. The concrete will furthermore have time to harden thoroughly before freezing weather sets in.

A large force of men is unnecessary for making concrete culverts of the size described. Four to six men make an excellent crew, but two men need not hesitate to undertake the work. However, it is best to have the cement, sand, and gravel on hand before starting, so there will be no chance for delays when only two men decide to undertake the work. No special skill or experience is necessary, provided one is willing to follow directions in detail and not attempt any short cuts. Hurrying cement work seldom pays, and in no case should the thorough mixing of the ingredients be slighted. A concrete mixer operated by hand or by a small engine is desirable. But this is not essential, and if directions are followed carefully good work can be done even with the simplest equipment.

Especially during the first few months keep the culvert well covered with earth or gravel to protect it from traffic. Allow no heavy teaming till concrete is thoroughly hard

Renovating Alfalfa

By F. K. SANBORN

RENOVATING will sometimes cause alfalfa to grow where other conditions are unfavorable. For removing weeds and clearing the field of grasshoppers, renovating has proved to be a great help. For removing early weeds, renovating should take place before the alfalfa plant is high enough to be injured. Under most conditions, summer and fall are the best time to renovate the alfalfa field.

The best time for renovating is after the first hay crop has been removed. Most of the weeds and annual grasses likely to compete with the alfalfa stems are just sprouting at this time. If not killed then, these weeds probably will grow to maturity.

In parts of the country where grasshoppers are a pest, renovate in the fall after the grasshopper eggs have been deposited. Such renovation exposes the eggs to freezing and other unfavorable conditions.

In some parts of the country where Kentucky blue grass grows naturally and becomes a menace to the crop, alfalfa must be renovated to prevent its being smothered by the grass. Even this method fails to stop the blue grass after four or five years, and the alfalfa must be plowed up.

Under certain soil conditions it is essential to cultivate alfalfa, and as large a profit may be obtained as through the cultivation of corn or other rowed crops. The soils which readily take up moisture, even if they have not been stirred for several years, are not benefited so much by renovation.

Either a disk or spring-tooth harrow is commonly used for doing the work, but renovation is best accomplished by means of special alfalfa cultivators having teeth which will not tear the crowns.

A rice-harvesting scene. The crop requires about six months to mature, which limits its culture to our southern latitudes

The bundles must be handled and shocked with great care, as rice shatters very easily. It is threshed like other small grains

Rice as a Wartime Food

How This Important Crop is Raised, Harvested, and Milled

By ROBERT H. MOULTON

A MAN must eat, whether he is a fighting warrior or a sturdy worker at home. If porterhouse steaks are not available we are satisfied with corned beef. Formerly the lowly "spud" was considered the barricade that separated man from starvation, but of late the poor potato has become as scarce as attractive heiresses, and they are as eagerly sought after.

Many a disconsolate lover has found that another sister of the starch family is possessed of attraction second only to her expensive sister, and to-day the eating of rice is becoming general throughout the country.

It isn't a bad habit to acquire, either, this eating of rice. Rice is nutritious and palatable and digests well. It can be cooked quickly, without the necessity of troublesome preparation and without waste. It is almost a perfect substitute for potatoes, and it forms the basis for the food supply of over two thirds of the peoples of the world.

In fact, practically every other country in the world consumes more rice than the United States, on the basis of population, and its enforced use here, due to the war conditions, ought to prove a benefit to our people.

Rice has been grown in this country for more than two hundred years, the growing areas being restricted, however, to several of the Southern States. Within the last few years California has entered the field as a rice producer, and the development of the crop in that State has been remarkable. From 7,500 acres planted in California in 1913, the acreage has grown to 60,000 acres in 1916, with a crop valued at over four million dollars. The 1917 planting will exceed 100,000 acres. The total acreage devoted to rice culture in the United States is about 900,000 acres, and the 1916 crop was 40,702,000 bushels.

Tractors Pull Binders Through Mud

THIS is less than half the quantity consumed in this country, however, as great quantities are imported from the Oriental countries. Japan, a great rice producer, has more than two thousand varieties of rice, but there are only three or four varieties grown in this country.

Rice, like oranges and lemons, requires certain favorable conditions for its growth. The climate must be warm, with plenty of sunshine and hot days. The land must be practically level, with plenty of water available. The top soil should be underlaid with a subsoil that is impervious to water. The subsoil should lie near the surface, for a deep soil requires more water and more time for its submergence than a shallow one.

Good drainage is necessary to get the land in condition quickly for harvesting and to prevent the crops from becoming waterlogged. Like all cereal crops, rice should be harvested quickly after it reaches maturity. One of the great difficulties which the Southern growers had to contend with was their inability to get on to the land quickly to harvest the crops after the water had been drained off.

In California the growers have solved this problem by using small but powerful tractors that run on their own endless track, and are capable of pulling the harvesting machinery through mud that would mire horses. These tractors, by reason of their adaptability to changing conditions, are also used for almost any kind of work on the ranch. They will do the plowing and checking of the land, will haul supplies to and from markets, will pump water from the irrigation ditches, or the motor will turn a feed mill or churn the butter for the housewife.

In rice culture the size of the field depends largely upon local conditions. Where the land is very level, a field may range from 60 to 80 acres, while in other localities the field cannot be larger than one or two acres. In Oriental countries, where all the labor is done by hand, the fields average half an acre in area. As water is required to stand at a uniform depth over the growing rice it must necessarily follow that the topography of the country will largely determine the size of the fields.

Water Must Cover Fields Uniformly

WHERE rice lands are along a river it is customary to run a canal to the outer rim of the rice field, entirely surrounding it. The dirt taken from this canal is thrown upon the outer bank to form a protecting levee against sudden rises from the river. Water to flood the rice fields is let in from the stream.

The larger tract inclosed by the main canal is now cut up by smaller canals into fields or sub-fields of suitable size, and small levees are thrown up on each side. It is essential that the surface of each of these sub-fields be level. The main canals average from 10 to 30 feet wide and are about 4 feet deep. They connect with the river by flood gates. The sub-canals average from 6 to 10 feet wide and are nearly as deep as the main canals. Boats are used to reach any point of the growing areas, and sometimes the levees are made wide enough to form roads.

Various methods for preparing the soil for the crops are used, some growers advocating deep plowing, while others use the shallow method. Naturally, the character of the soil should govern. One of the advantages claimed for deep plowing is that, as the rice does not feed much below the plow line, the deeper the plowed area the more food is placed at the disposal of the growing crops.

After the ground is plowed, a disk harrow is run over the surface, followed by a smoothing harrow, and often a heavy roller is used to break up the clods.

Sowing is done early in spring and about two bushels of seed are used to the acre. While there are several methods of planting the seed, the best results are said to be obtained with a drill. This insures the equal distribution of the seed at a uniform depth.

Flooding is the most important feature of rice-growing. Except where water is necessary for germinating the seed, flooding is not practiced until the rice is six or eight inches high. When the rice reaches that height water is run on to the land to a depth of from three to six inches. It is constantly changed to prevent stagnation. The principal thing to watch is the height of the water, as it is essential that the water be kept at the same depth throughout the entire field, otherwise one part of the crop will ripen before the other.

Harvesting machines are brought on the land as soon as the grain is ripe. It takes about six months to grow a crop of rice in this country. Where the drainage is good and the ground dries quickly, reaping machines are generally used. In California the track-laying tractors are almost universally used in the rice fields, and the harvesting can be commenced a week or two earlier by their use.

In harvesting, the rice is cut from 5 to 12 inches from the ground and the cut grain is laid on the stubble to keep it off the wet soil. After a day's curing the grain is removed from the field and shocked on dry ground. Extreme care must be taken in shocking the grain to prevent the rice from being lost. The bundles are stacked against each other, with the heads in. Slow curing in the shade produces the toughness of kernel necessary to withstand the milling process. The rice is left in the shock until the straw is cured and the kernel hard. The threshing is done by the regulation threshing machine.

The Polishing Process

THE rice as it comes from the thresher is called "paddy" or "rough rice." It still has surrounding it the husk of close-fitting cuticle. The process of milling removes this husk and polishes the rice. This polishing is more a fad than a necessity, for by it some of the most nutritious parts of the rice are lost.

The improved method of milling rice is quite complicated. The paddy is first screened to remove foreign substances. The hulls are removed by rapidly revolving stones set about two thirds of the length of a rice kernel apart. The product goes over horizontal screens and blowers that separate the light chaff and the whole and broken kernels. The grains are now run into huge mortars holding from 4 to 6 bushels each, and pounded with pestles weighing about 400 pounds. The grains, if properly cured, are not broken by this pounding, although it would crush to pulp any other cereal.

From these large mortars the rice is removed to flour screens, where the whole grains are separated from the flour and chaff. During the various processes the rice becomes heated through friction, and at this stage it passes into cooling bins, where it remains for eight or nine hours. It is then passed over brush screens, where the smaller rice and flour are separated from the larger kernels. The grain is now ready for the polisher, to give it the pearly luster.

The polishing is done by friction against the rice of pieces of moose hide or sheepskin, tanned and worked to a wonderful degree of flexibility and softness.

These skins are loosely hung around the sides of a revolving cylinder constructed of wood and wire gauze. From the polisher the rice goes to the separating screens, which grade the rice for the market.

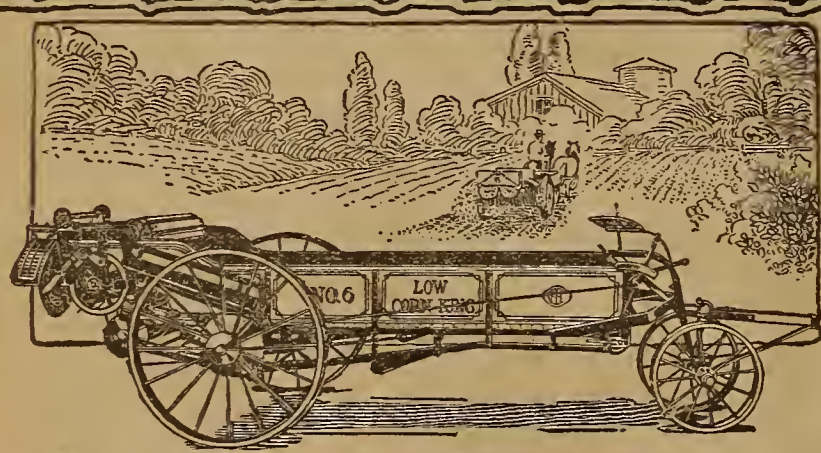
Delivering rice to the mill where it is screened, hulled, polished, and graded. The demand for the better qualities of rice in the United States has always exceeded the supply

THE Northwest is truly a Firestone country. Firestone reliability hits the bull's-eye with these big business men of the wheat farms. Most Miles per Dollar is also a winning argument. Accustomed to doing things on a big scale, the Northwest farmers insist upon reliability, upon economy, upon Firestone. The qualities that appeal to them will appeal to you. Try Firestone Tires—you'll see.

Free Book, "Mileage Talks," No. 146, for the name of your dealer and the make of your tires.

FIRESTONE TIRE & RUBBER COMPANY - AKRON, OHIO
Branches and Dealers Everywhere

Firestone



Which Spreader Will You Buy?

THE popular call today is for a low down wide spread machine. Farmers who have had experience are all turning to the wide spread. Ask any of your neighbors who is using a **Low Cloverleaf, Low Corn King** or **Low 20th Century** spreader why he bought it. Does he find it more economical? Does it do better work? Are his crops heavier where he uses it? What is there about it that makes it worth having?

A **Low Cloverleaf, Low Corn King** or **Low 20th Century** spreader is worth more than any other kind. Spreaders like these cost less in the long run than any cheaper machine because they increase both crop yields and land values.

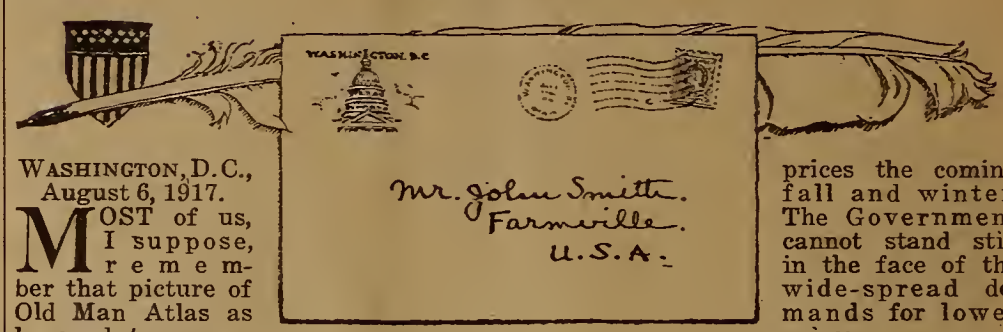
If you had rather read about the good features of these spreaders than ask your neighbors about them, drop us a line and we will send you complete information and tell you where you can see the spreaders.

International Harvester Company of America
(Incorporated)
CHICAGO U S A
Champion Deering McCormick Milwaukee Osborne Plano

Gouging the Public

How It is Made to Bear Increased Burdens

By JOHN SNURE



WASHINGTON, D.C., August 6, 1917.

MOST of us, I suppose, remember that picture of Old Man Atlas as he used to appear on the front of our school geographies. He was represented as supporting the whole earth, and was having a hard time of it.

Much as I once sympathized with Atlas, I have come to the conclusion in later years that there are plenty of other folks in the burden-carrying business. Recent revelations in connection with the Food Control Bill in Congress have strengthened this conclusion. Before the Food Control Bill was taken up a great deal was heard about the high prices of foodstuffs, but comparatively little was heard about high prices in other directions. It has gradually become more and more plain that the great American public is having a tremendous toll in excessive prices taken out of its pocketbook for the bulk of the things it buys—things needed for ordinary, everyday use, without any reference to luxuries.

For the Government to impose something like two billions of dollars more in taxes on the people in order to conduct successfully the war with Germany—in addition to floating vast bond issues—seems like putting a good deal of a weight on the public. Nobody who is patriotic objects, because we intend to stop the Kaiser, no matter how high the price.

But it is becoming more and more evident that the public is having imposed on it, quite apart from any government taxes, a burden in the form of higher prices for the common necessities which neither patriotism nor common sense calls on the people to bear.

This situation is coming to be so well understood that both Congress and the Administration have been moved to act in efforts to cut down these excessive prices and to bring about government regulation.

I do not now speak especially of foodstuffs. A large number of members of both houses of Congress insisted, from the time the food control plan was launched, that it was not going to be sufficient simply to regulate the distribution and the prices of foodstuffs; that the farmer and the consuming part of the population should be protected against exorbitant prices for other necessaries; that regulation as to these things was highly essential if the cost of living was to be lowered or even to be kept from climbing to still higher figures than ever. Members who took this position haven't had much trouble proving their case.

TAKE the case of coal. Investigations have been under way by the Senate Interstate Commerce Committee and by other agencies of the Government. Some astounding revelations have been made, causing much bitter feeling against coal operators and dealers, and stirring up wide-spread demand for government regulation of coal production, distribution, and prices.

With respect to soft coal it was shown before the Senate Interstate Commerce Committee that on the average it cost about $1.50 a ton loaded on cars at the mouth of the mine, and that the increase in cost of operating the mines, due to the war and other causes, did not exceed 50 cents a ton. Yet this coal has been sold at retail at from $5 to $8 a ton. This situation has obtained with the production as great or greater than it ever was.

Coal operators admitted that 50 cents a ton would be an adequate profit on coal sold at the mine. This indicates that $2 would be somewhere near a reasonable price per ton for coal bought at the mine. The coal committee of the advisory commission of the Council of National Defense, headed by F. S. Peabody, a prominent coal man, however, succeeded in making an arrangement whereby the price was to be about $3.

Secretary of the Interior Lane sanctioned this figure, but Secretary of War Baker and Secretary of the Navy Daniels refused to consent to it. As a result this price will be reduced, and it is entirely probable that the public will get much needed relief in the matter of coal prices the coming fall and winter. The Government cannot stand still in the face of the wide-spread demands for lower prices.

Just what do such prices as those now charged on coal mean? Former Railroad Commissioner Clifford Thorne of Iowa, in testifying before the Senate Interstate Commerce Committee, summed the matter up in a striking way when he said:

"If by any chance these Peabody prices should be accepted ultimately by this Government as fair and reasonable, it will mean that the fuel bill of the American people throughout the ensuing year will be more than $700,000,000 greater than that of last year."

This is more than a third of the entire amount of the new war tax measure.

WHAT has happened in the coal business is an excellent illustration of how there has grown up a policy of charging the public "all the traffic will bear."

Government investigations in other lines show flagrant examples of excessive prices.

In some cases this is done through the exaction of unduly high prices for materials needed by the Government to carry on the war.

For aluminum canteens, a million of them, the Government was charged 74 cents a canteen. The aluminum itself costs 27½ cents a pound, and it takes about a half pound for a canteen.

It is not likely anybody would undertake to defend the exaction of such profits as this, even in times of peace, to say nothing of a time of war.

Or, consider the attempt to close a contract with the Government wherein steel was to be paid for at $95 a ton for use in building government ships—ships to meet the emergency caused by the heavy inroads on the shipping of the allied countries by the German submarines. This arrangement was finally blocked, after a sharp controversy, and steel was obtained at about 40 per cent less.

Moreover, it has been shown that while the Government in war time is strong enough to protect itself against extortionate prices, the public—which means you and me and Jones and Smith and Brown—can't protect itself. Nothing but the strong arm of the Government apparently can do that. Hence the demand for far-reaching legislation granting power to the Government to exercise control over a wide field of industry.

Of course there are those who raise the cry that this is socialism, pure and simple. In a sense it is. But it will be hard for the average man, who has been subjected to unduly high prices for most of the necessaries he buys for use in his home, on his farm, about his place of business, to believe that the public through its Government should not have the right to insure itself just and reasonable treatment no matter what name one gives to it. In other words, the time is rapidly passing when people can be frightened away from what they believe just by calling it socialism or any other name.

Government regulation demonstrated only a short time ago what it could do when the railroads of the country demanded a 15 per cent increase in freight rates. This would have meant an increased burden on the people of this country amounting annually to $400,000,000, or nearly that. The Interstate Commerce Commission refused to permit such a sweeping advance, and held the roads down to increases amounting to something like $65,000,000 annually. True, many believe this was too much, but in any event it spelled a great gain for the public as compared with what it would have lost had there been no regulation.

As the war goes on and needs develop, the Government may be depended on to assert its control in strict fashion over many things which formerly were permitted to run on as they pleased. What is more, it need surprise nobody if the public likes some of the regulation it imposes in wartime so well it will insist on continuing it when peace comes.

W

Our Navy of the Air

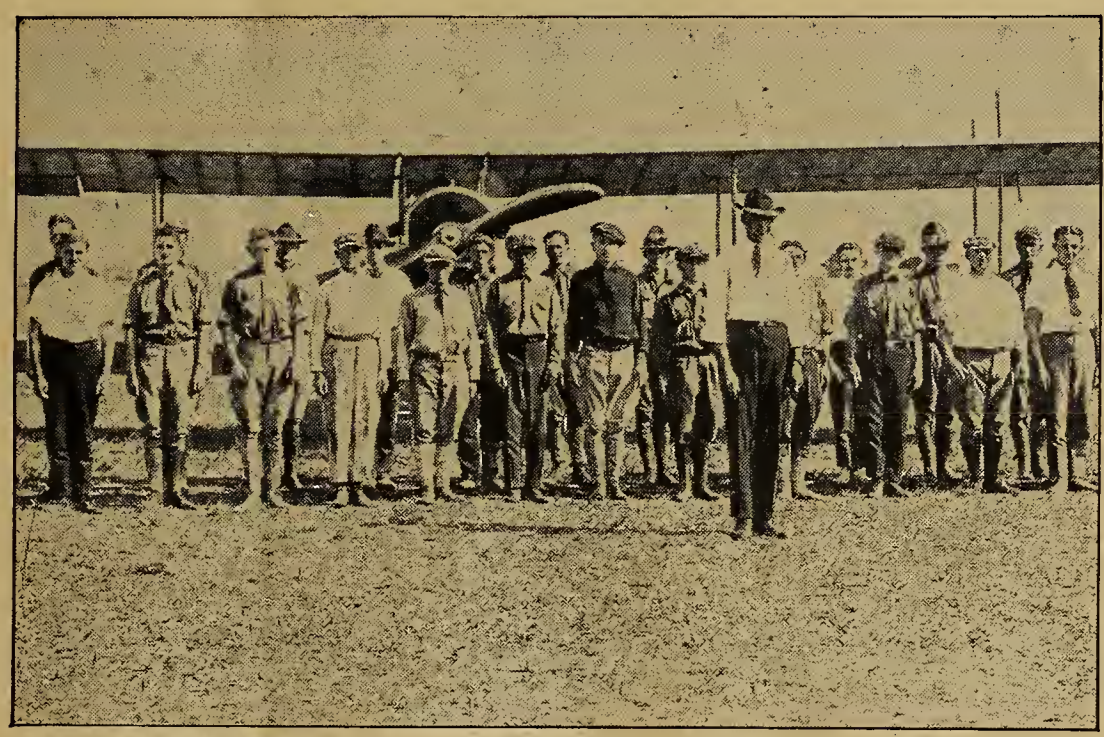
Copyright by Underwood & Underwood, N. Y.

SHIPS of the water and ships of the air fraternize in this picture. The aëroplane and hydroplane are taking short practice flights to prepare them for duty soon over the hostile fields of Europe. It is said that at present the Government plans to construct 3,500 planes within twelve months, and to man them with 5,000 to 6,000 flyers chosen from the aviators in the training camps. Because it is the newest and most venturesome type of military service, and probably also because of the greater freedom enjoyed by the men and the greater chance for personal initiative, air service is very popular with volunteers.

THE Villa punitive expedition in Mexico furnished an opportunity for some of Uncle Sam's army aviators to try their wings last year. The airmen in this photograph are getting the "eyes" of the expedition ready for shipment to the point in Mexico where the hunt for the bandit chief was begun. The picture shows what half a dozen airplanes looked like after two hours' dismantling. Scenes like this will be repeated in France, for thousands of airships will be sent out for the double purpose of bombing munition centers over the German lines and keeping the enemy from flying over allied ground to make observations. If they succeed, the Central Powers will be fighting a blind fight. The use of planes to a great extent in times of peace is prophesied.

Copyright by Underwood & Underwood, N. Y.

HERE is one of the latest types of dirigible taking her maiden flight over the water. After it is thoroughly tested out in these short trials at skimming through the air over both land and sea, the job of this craft will probably be to serve as a means of observing enemy operations. Dirigibles are now comparatively rare in the United States, but they may form an important part of the fighting forces abroad. The "eyes of the artillery and infantry" they are called by military critics, who say that bomb-throwing is only a small part of the damage which airplanes may do. Sighting the enemy's movements is their great contribution.

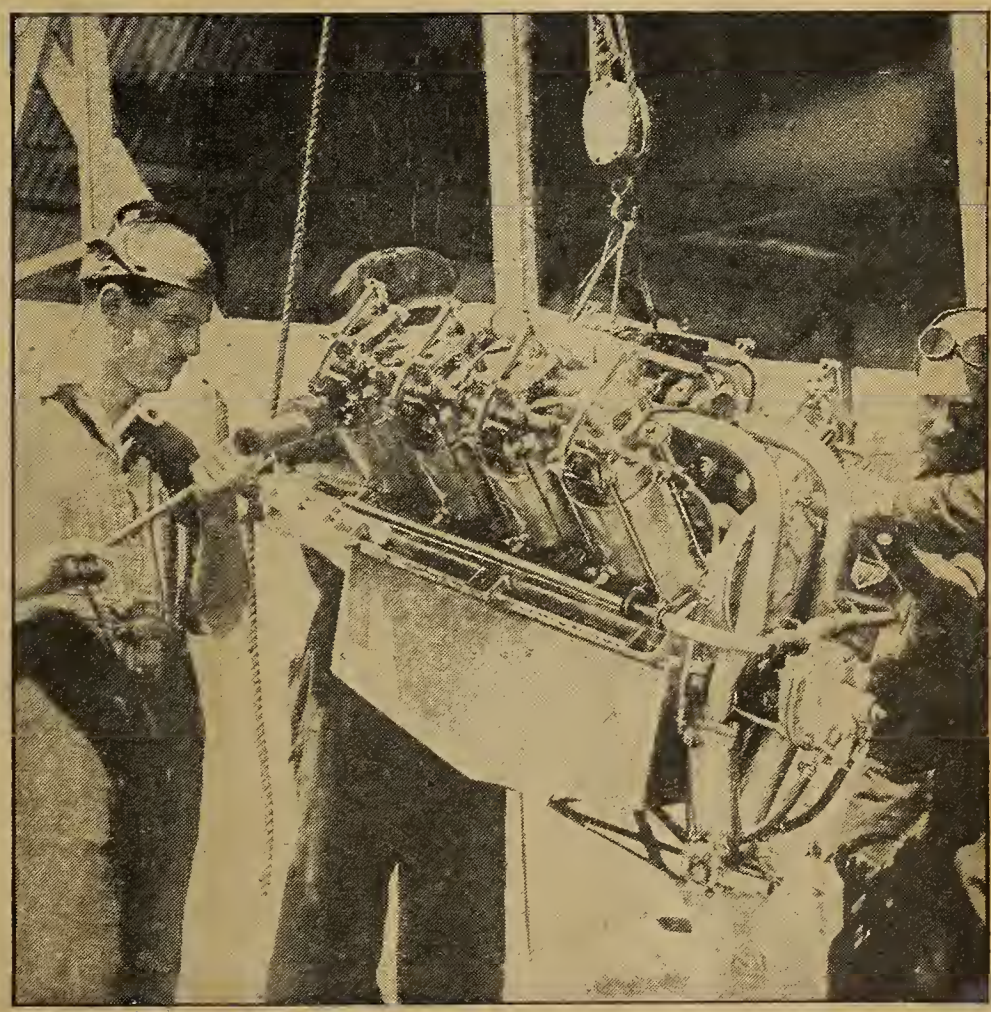


Copyright by Underwood & Underwood, N. Y.

THESE men are getting ready to wear the white star of the American air service. They are enrolled as sergeants in the Aviation Reserve Corps for preliminary training. The experience of the French with the volunteers in the American Escadrille in France shows that Americans make good airmen. Their record proves them to be daring, cool-headed, and capable of unusual endurance. Aviation takes nerve and strength, and the physical examination for this service is probably the most exacting of any that Uncle Sam gives his volunteers.

A CLOSE-UP view of a 90-horse-power aëroplane motor. These men are studying the intricacies of the machine at one of the aviation schools in the United States. Before a man can hope to do much with air craft, he must have an accurate knowledge of the workings of every part of it. There are no garages between Earth and Mars, and a little thing gone wrong with the machinery will result in a hard situation for a man in the air who does not know all about his plane. Every pilot at the front, no matter what his rank, has at his command one or two mechanicians who keep his plane in apple-pie order, and hundreds of skilled mechanics are helping with the training of the men who are trying their wings in American aviation schools.

Copyright by Underwood & Underwood, N. Y.



Copyright by Underwood & Underwood, N. Y.

FARM and FIRESIDE

THE NATIONAL FARM PAPER

Harry M. Ziegler, *Managing Editor*

Associate Editors:

D. S. Burch B. F. W. Thorpe Ruth M. Boyle

Published Twice a Month by

The Crowell Publishing Company

Springfield, Ohio

GEORGE H. HAZEN, President

Executive Offices: 381 Fourth Avenue, New York City. Branch Office: Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

H. J. Brown, Jr., *Business Manager*

D. W. Henderson, *Advertising Manager* L. V. Rodda, *Circulation Manager*

Subscription Price

One year (24 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents a year.

About Advertising

Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.

Advertising rates and regulations furnished upon request.

August 18, 1917

Hope for Renters

THE federal land banks are apt to reduce the proportion of tenant farmers and increase the proportion of farm owners.

Money at five per cent, without any "trimmings," and for a long term of years, is apt to be exceedingly attractive to a great number of industrious farmers who are earning a good living, paying high rents for the land they till, and laying up a surplus.

By renouncing a few luxuries, drawing out that surplus, and paying a little more rent to Uncle Sam, they can virtually own the farm. They will get their deeds after a while.

In the meantime they know that they will not be forced to move next spring; nor, if they enrich the fields and thus raise larger crops, will they be penalized by having the rent raised.

Feeding Great Cities

IT IS only when a transportation tie-up, blockade, or crop shortage of one or more staple food products takes place or threatens that we stop to realize the full magnitude of the task of feeding cities like New York, Chicago, and others approaching these in population. So long as a constant procession of train loads of food supplies continue speeding cityward, the produce receivers, wholesalers, jobbers, and retailers keep a steady current of food distributing to the consumers' kitchens. But when this food current is interrupted, even for a few days, there is shortage and hardship.

Occasional interruptions to food shipments are of economic advantage. Many families continue in a rut in their habits of eating. Nothing but certain foods cooked and served in a definite way will satisfy. But when potatoes, for example, retail for 1,800 per cent higher than cornmeal and 1,000 per cent higher than rice, according to the food value of each, as we have recently experienced, the consumer may experience a financial jolt sufficient to cause him to give more thought to food value and food selection. It is a part of really successful home-making to be able to substitute, transpose, and even appetizingly disguise foods when necessary to equalize living cost, when certain food staples rise temporarily above a reasonable food value.

The efforts now being made by New York State and New York City authorities to provide state and city food regulation departments is a step toward the better distribution and sale of food products. This investigation of the handling and sale of food products has shown that 40 per cent of the average city man's income goes for food, and that millions of dollars' worth of perishable food products go to the dump unnecessarily every year in New York City, largely as a result of faulty methods of handling and inadequate terminal facilities. A concrete example of this waste is shown by the fact that as high as 200 cars of produce at a time must often be held on back tracks for four or five days before they can be unloaded.

These findings unearthed by investigating committees show plainly why so many shipments of goods from the farm net the shippers nothing, or next to nothing. The time is ripe for turning a strong light on the methods of food distribution.

The Hen on a New Basis

POULTRY KEEPERS are now balancing their poultry accounts as never before. Time was when a large flock of chickens was needed to consume the quantities of grain spilled and scattered by careless methods of threshing, loading, and unloading practiced generally on most farms. But since grains have doubled and tripled in selling and feeding value, waste of this kind has been eliminated. The consequence is that now when grain, having a selling value of $2 to $3 a hundredweight, must be deliberately fed to a flock of hens and growing chicks, poultry-keeping changes to a different basis.

The cost of a pullet raised to laying age has mounted from 25 to 30 cents some years ago to not far from a dollar, even when good range is available. By the end of her first year of laying a hen now has a debit charge against her of not less than $2.25. If she lays only six dozen eggs, the average for the American scrub hen, she has hardly balanced her board bill, and is a debtor for labor and overhead charges. On the other hand, if the hen belongs to one of the improved strains of laying stock bred for heavy production, her year's output of eggs can safely be reckoned double that of her scrub sister, or twelve dozen, which brings her income above cost of feeding from the shell up to $1.50, if wholesale prices for feed and eggs for the past year are allowed.

Considered from this angle, the sensible move to make is to improve the laying quality of the hens kept, rather than to wipe the entire poultry business from the stock slate, as many are now doing. An increase in the producing capacity is the general movement among dairymen. Why not among poultrymen?

Let the Hogs Graze

AS NOTHING else has, the high price of corn has brought home to farmers the realization of the grazing possibilities of hogs. Because of this high price of feed there never was so great an incentive to use green forage. But there are hog pastures and hog pastures with a great difference between them.

Alfalfa, clover, and rape make palatable herbage for hogs, and the porkers make very handsome returns in addition to the gains made from grain when given the run of such pastures. These succulent pasture crops have been known to make from 500 to 800 pounds of pork per acre in addition to what can be accounted for through the corn fed.

Experience has shown that hogs on a poor pasture didn't pay for the corn they ate, while hogs in alfalfa and clover returned much more than the market price for the corn fed. This shows that the hogs on the good pasture made much better gains from the corn than the hogs on the poor pasture.

As the margin between the price of corn and the price of hogs is all too small at best, if farmers can increase the returns from corn fed to hogs by pasture another problem will be solved.

Somewhere in France

Our Letter Box

Co-operate with Renters

DEAR EDITOR: I would never rent a farm to a man without a thorough understanding and agreement as to how the farm should be cropped. After having found what you consider a suitable renter, and before any papers are made out, put it to him straight that you still own the farm, and that you know the farm just a little better than he does. Then sit down and map out the farming operations for the season.

You know best the state of fertility of each field, also the peculiarities of the farm. Every farm and every field on the farm is just a little different from any other farm or field on the farm.

Impress on the prospective renter that it is for his interest to counsel with you, as you are after the best results.

I wish to say here that I take it for granted that you are renting share rent, as that is by far the most desirable way to rent.

If your renter takes the high ground that he does not wish any interference in his farm operations, drop him right there, and you will have saved yourself money and trouble. Any renter who cannot see the justice and reasonableness of the above plan you don't want.

After having come to an agreement with your man, don't be in too big a hurry about signing the contract.

Take plenty of time, and be sure you get into the contract everything important concerning your agreement; you may have a good legal blank, but every deal is a deal by itself, and has usually some special conditions.

It is a mighty good plan to take several days thinking up and jotting down things you want in the contract. There will be enough things left out, unless you are more fortunate or foreseeing than the average.

I feel this is a very important matter, and one of which I speak from experience. WILLIAM J. COOPER, Michigan.

"There's a Reason"

DEAR EDITOR: I merely want to tell you why I subscribed for FARM AND FIRESIDE. It is the biggest, brightest, and best farm paper published.

HORACE R. SCHUE, Pennsylvania.

Is It Hemp?

DEAR EDITOR: I notice in one of your articles that you say sisal hemp does not thrive in this country. I remember seeing in Lake County, in southern Florida, a plant which I think was hemp growing beautifully. It was used in gardens as an ornamental plant. When it bloomed it sent up a spike 12 or 15 feet high from the center of the plant, and when the blossoms, which are not attractive, fell off, little plants came in their places away up in that spike. The plant will also grow from the root when it is broken and exposed.

The soil in which it flourished is very sandy. It seems to me hemp could be raised on a very large scale there if people tried, and would be very profitable at present prices. There are thousands of acres of that sandy land.

MRS. M. A. BROWN, Arkansas.

Good-Health Talks Help

DEAR EDITOR: Dr. Spahr's health talks in FARM AND FIRESIDE are the first items read when we get our paper, and I feel as if I should thank you for them. We have gleaned many a useful hint from them, and we save them all, for we are three miles from a doctor.

MRS. KATHARYN CREWS, Virginia.

Seeking Rainbow's End

DEAR EDITOR: Since receiving your kind suggestion a few weeks ago in answer to my question, we have succeeded in getting our farming operations on a better footing. The loss we suffered from frost and hail, just when our crops were nearly ready to market, was a serious handicap. But here in central Florida newly planted crops come on again with a rush. My son secured this 12-acre farm (four miles from a town), but at present has only five acres under cultivation. The remainder of the farm is unfenced and is grazed over by calves and goats. There are a few turpentine pines so tall that they seem to pierce the sky, standing in a carpet of weeds and palmettos. I came to this locality on All Fools' Day, and did not expect to find Ponce de Leon's fountain of youth, though seeking such a shrine might seem to be the proper "caper" for one of my years (I shall be eighty years old in June). But I did hope to find the other end of the rainbow, and so far there's been "nothin' doin'."

FARM AND FIRESIDE readers may like a word about our housekeeping ways. We have a porch to which is attached a two-room house. One end of the porch is kitchen and dining-room, the other end a reception-room with looking glass, plants, and plenty of chairs to make comfortable our neighbors who are delightfully friendly. For instance, a big turtle stopped outside our gate, put its head in the sand, and remained for a rest. My son's wife summoned a neighbor's boy who killed and dressed the "turkle," and we had a dinner fit for the President. MRS. E. FORD, Florida.

From a City Reader

DEAR EDITOR: While renewing our subscription to FARM AND FIRESIDE we would like to include a few words of honest commendation and appreciation. We have not missed a number in more than thirty-one years. Twenty-nine years of that time we have lived in a large city, so you see it is not so much for the "Farm" as for the "Fireside" that we enjoy it.

We feel that it brings us many a good clean whiff of country air and a cheerful glimpse of something besides paved streets and brick buildings. We thoroughly enjoy its unvarying wholesomeness, and find its stories always clean and entertaining. It grows better every year, and so we say, "Long live FARM AND FIRESIDE."

MRS. J. A. KING, New York.

EW

The Truth About Tractor Lubrication

By Those Who Know

THEORY has its place in any scientific equation. But for everyday purposes we must rely on practical experience. Recommendations by the Standard Oil Company must be correct, not only in theory but backed up by practical, every-day experience under working conditions.

Your tractor pulls a terrific load. The working temperature of your engine is extreme, whether you burn gasoline or kerosene for fuel.

You must have an oil that will maintain its viscosity under any and all conditions. If it doesn't, metal will touch metal and there is trouble—serious trouble—more expensive than your lubricating oil for several seasons will amount to.

Crookston, Minn., June 28, 1917

To Whom It May Concern:—

Considerable advertising has been done by a great many Oil Companies, stating the amount of saving, etc., which could be made through the use of high priced lubricating oil, and as I am the owner of a Big Four—four cylinder—30-60 Gasoline burning tractor, I was interested in finding out whether high price had anything to do with high-quality, so decided to have a test made.

June 26th I filled my engine crank case with an oil retailing in Crookston at 65c per gallon when purchased in barrel quantities, and which is the oil recommended by the company manufacturing it to be the proper oil for summer use in a 1915 model, Big Four 30-60 tractor.

I ran the tractor myself, pulling the same load under exactly the same conditions as those previously encountered while using Stanolind Gas Engine Tractor Oil, and although there was practically no difference in the weather temperature, it only took two hours work pulling a 30-inch, Model A, Russell Elevator Grader until the temperature of the cooling system had risen 50° higher with the 65c oil than when using Stanolind Gas Engine Tractor Oil.

It is needless to say that with this difference in temperature of the cooling system more gasoline and lubricating oil was used. I, therefore, feel that I can conscientiously recommend Stanolind Gas Engine Tractor Oil, even though it is much cheaper in price, to all operators of Big Four 30-60 Gasoline Burning Tractors.

My tractor was purchased during the season of 1915, and since that time to date I have plowed 1800 acres, broke 475 acres, and have pulled a heavy road grader more than 800 miles in the construction of roads. I have never found it necessary to overhaul the motor as the compression is good and the tractor has plenty of power.

With the exception of one barrel of lubricating oil, I have never used other than Stanolind Gas Engine Tractor Oil manufactured and sold by the Standard Oil Company of Indiana, which is selling today at 29.4c per gallon F. O. B. Crookston.

Yours very truly,
[Signed] E. A. McCOY.

A High-Priced Oil Does Not Mean The Best Oil

There are lubricating oils on the market which sell for double the price of Stanolind Gas Engine Tractor Oil, Standard Gas Engine Oil and Polarine.

But these latter oils are made by the Standard Oil Company (Indiana) and for that reason can be, and are sold, at a low price.

They are made especially for tractors. They are the results of exhaustive and extensive research work on the part of the most complete assemblage of lubricating experts who have devoted their lives to the solution of lubricating problems. These men recommend Stanolind Gas Engine Tractor Oil for tractors using kerosene; Standard Gas Engine Oil for tractors burning gasoline—and Polarine in various grades for tractors having high speed motors.

They Say—

that these oils add power and life to your motor; that they are of great durability and economical in use; that they lubricate thoroughly even the remotest reciprocating surfaces, reducing friction to a minimum; that they maintain their viscosity even under extreme heat conditions to practically the same degree as the so-called heavy oils.

What Leading Tractor Builders Say—

The International Harvester Company recommends Stanolind Gas Engine Tractor Oil for their tractors. J. I. Case Threshing Machine Company recommends Stanolind Gas Engine Tractor Oil for their tractors, as do numerous other manufacturers recommend one or the other of these superior lubricating oils for their respective tractors.

And the letter from Mr. E. A. McCoy of Crookston, Minn., at the left, needs no comment. If you go to a physician you accept his diagnosis—you don't dispute the judgment of a lawyer on legal matters. Accept the united recommendation of the largest manufacturers of tractors, of the largest refiners of oil, of the best petroleum research men, and an enthusiastic tractor owner.

Made, Recommended and Guaranteed by the

STANDARD OIL COMPANY *(Indiana)*

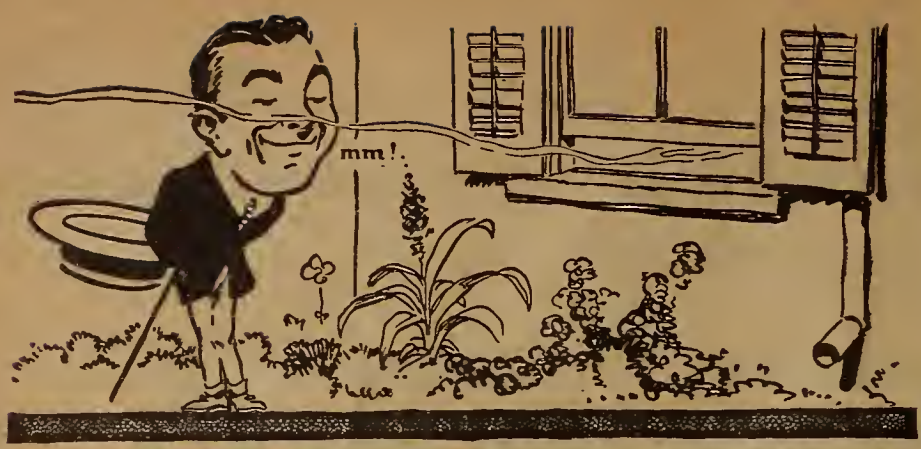
72 W. Adams St. Chicago, U. S. A.

477

Table of Tractor Specifications and Cylinder Oils Recommended

Key S. G. E. Standard Gas Engine Oil
G. T. Stanolind Gas Engine Tractor Oil
Pol. Polarine Oil
H. P. Heavy Polarine Oil
E. H. P. Extra Heavy Polarine

Advance Rumely—		
Oil Pull	30-60	G.T.
"	15-30	G.T.
Gas Pull	15-30	G.T.
All Purpose	8-16	G.T.
"	12-24	G.T.
Allis-Chalmers	10-18	H.P.
Allwork	12-25	G.T.
American	20	S.G.E.
"	60	S.G.E.
" Oil Tract.	20-35	G.T.
Andrews	10-20	Pol.
A & T	18-36	E.H.P.
A & T	25-50	E.H.P.
A & T	30-60	E.H.P.
Avery	5-10	H.P.
"	8-16	H.P.
"	12-25	E.H.P.
"	18-36	E.H.P.
"	25-50	E.H.P.
"	40-80	E.H.P.
Baby Johnson	27-29	Pol.
Bates	10-20	G.T.
"	16-30	G.T.
Bates Steel Mule	30	H.P.
Beeman-Garden	4	G.T.
Best	75	G.T.
Big Bull	7-20	S.G.E.
Boring	10-20	G.T.
Brillion	25	S.G.E.
Buckeye, Jr.	8-16	Pol.
Buckeye	40	G.T.
Case	10-20	H.P.
"	12-25	H.P.
"	20-40	G.T.
"	30-60	G.T.
Caterpillar	45-25	G.T.
"	75-50	G.T.
Champion	16	S.G.E.
Chase	25-35	H.P.
"	15-25	H.P.
C.O.D.	13-25	G.T.
Common Sense	15-25	Pol.
Creeping Grip	20-12	G.T.
C.T.4	16-32	Pol.
Dakota No. 1	20-25	Pol.
" No. 2	40-45	Pol.
Denning	10-18	H.P.
Dill	28-47	Pol.
Eagle	12-25	G.T.
Emerson L	12-20	H.P.
" Big 4	20-35	G.T.
" Big 4	30-55	G.T.
" Reeves	40-65	G.T.
Fairmont	24	G.T.
Farm Horse	15-26	S.G.E.
Farmer Boy	35	Pol.
Farmobile	12-20	Pol.
Farquahr	4-30	G.T.
"	4-40	G.T.
Fitch	25	G.T.
Gray	20-35	S.G.E.
"	15-25	S.G.E.
Hackney Auto Plows	20-25	S.G.E.
"	15-20	S.G.E.
Happy Farmer	8-16	S.G.E.
Hart-Parr—		
Little Devil	22	G.T.
Crop Maker	27	G.T.
Oil King	35	H.P.
Steel King	40	H.P.
Old Reliable	60	H.P.
Hoosier	8-16	Pol.
Huber	20-40	G.T.
"	35-70	G.T.
Hume	20-30	Pol.
Hume Jr.	12-18	Pol.
I. H. C.—		
Mogul	8-16	G.T.
"	12-25	G.T.
Titan	10-20	G.T.
"	15-30	G.T.
"	30-60	G.T.
Imperial	40	G.T.
Ingeco	10-20	G.T.
Iron Horse	15-25	Pol.
K-C	20	Pol.
Kinnard	15-25	G.T.
Knox	40	Pol.
K-T	12-25	Pol.
Lausen	15-25	H.P.
"	20-35	H.P.
Lawter	40	S.G.E.
Leader	12-18	S.G.E.
Leader, Jr.	9-15	S.G.E.
Leader	25-40	S.G.E.
Lion		S.G.E.
Little Oak		H.P.
Louisville Avery	10-20	G.T.
Maytag	25	Pol.
Minneapolis	15	S.G.E.
"	20	G.T.
"	25	G.T.
"	40	G.T.
Moline Universal	6-12	G.T.
Morton	60	Pol.
New Age	10-18	Pol.
Neverslip	12-20	S.G.E.
Nilson	40	H.P.
Olin	13-25	G.T.
Paramount		Pol.
Parrett All Pur.	10-20	Pol.
Peoria	8-20	S.G.E.
Phoenix		S.G.E.
Pioneer "30"	30-60	E.H.P.
" Jr.	20-45	E.H.P.
" Pony	15-30	G.T.
Plow Boy	10-20	S.G.E.
Prairie Dog	25	Pol.
Rock Island Heider	10-20	G.T.
Russell	12-24	S.G.E.
"	20-40	S.G.E.
"	30-60	G.T.
Sandusky	38	S.G.E.
Simplex	15-30	S.E.G.
Simplicity	25	G.T.
Smith	10-20	S.G.E.
Standard-Detroit	10-20	Pol.
Stewart	40-60	H.P.
Straddle Row Universal	35	Pol.
Strait, Model 2		Pol.
" " 3		Pol.
Strite		S.G.E.
Sullivan	8-10	G.T.
Tom Thumb	20-12	G.T.
Twin City	15	H.P.
" "	25	H.P.
" "	40	H.P.
" "	60	H.P.
Waite	8-16	G.T.
Wallis (Cub)		G.T.
Waterloo Boy	12-24	H.P.
Wolverine		G.T.
Yuba		G.T.



HOW do you know Mother's baking Ginger Bread?

"Your Nose Knows"

By that warm, spicy *fragrance.* Was there ever anything quite like it? Any *fragrance* half so homey and appealing? What an appetizing promise it held! The purest things in life make their strongest appeal through *fragrance.* It's the fragrance, the *pure fragrance,* of a good tobacco that satisfies and wins you—"Your Nose Knows."

It's the *pure fragrance* of Tuxedo that wins you to

Tuxedo

The Perfect Tobacco

The rich, ripe Burley leaves of which Tuxedo is made store the sunshine of the Blue Grass section of Old Kentucky and bring to you with every smoke that *pure fragrance* that is all its own—"Your Nose Knows."

Try this Test: Rub a little Tuxedo briskly in the palm of your hand to bring out its full aroma. Then smell it deep—its delicious, *pure fragrance* will convince you. Try this test with any other tobacco and we will let Tuxedo stand or fall on your judgment—

"Your Nose Knows"

Guaranteed by The American Tobacco Co.

SQUAB BOOK FREE

Make money breeding PR squabs. 1917 markets highest on record. Start at once. Enlarge. We teach you how to sell best as well as how to raise. Write at once for this big free book to the founder of the squab industry. PLYMOUTH ROCK SQUAB CO., 503 HOWARD ST., MELROSE HIGHLANDS, MASSACHUSETTS.

RAT CORN

Kills Rats and Mice Harmless to Humans No Odors SEED, HARDWARE, DRUG, GENERAL STORES

Ditches Terraces

Grade roads, build dykes, levees with The Martin Farm Ditcher and Grader

Works in any soil. Makes V-shaped ditch or cleans ditches up to four feet deep. All steel. Reversible. Adjustable. Write for free book and our proposition.

10 Days Free Trial

Owensboro Ditcher & Grader Co., Inc. Box 207 Owensboro, Ky.

A Good Position For You

in business, civil service, commercial teaching, or a secretaryship when you graduate from

Gem City Business College

Est. 1870, Quincy, Ill.

America's Greatest Commercial School

Write today for handsomely illustrated year book describing all courses. Address

D. L. Musselman, Pres.

Lock Box 14 Quincy, Ill.

$1.95 Made to Your Order

Special Offer— to prove our fine quality: These fine Pants for Dress or Business, choice of many handsome styles, guaranteed for 18 months' solid wear and satisfaction or MONEY BACK, absolute $5.00 value—while they last, one pair to a customer, Express prepaid for only $1.95

PANTS

No Extra Charges

No charge for big Extreme Peg Tops or Cuff Bottoms, nothing extra for fancy Belt Loops or Pocket Flaps, no charge for Open Welt Seams or Large Sizes—all novelty features Free—no extra charges of any kind.

Cash Profits to you for taking measures of relatives and neighbors. Young George Gekowich made $66.16 in one day. Write for FREE samples today.

Chicago Tailors Association Dept. B-63, 515 S. Franklin St., Chicago

Send No Money

SICK BEASTS

BOOK on treatment of Horses, Cows, Sheep, Dogs and other animals, sent free. Humphreys' Homeopathic Veterinary Medicines, 156 William St., N. Y.

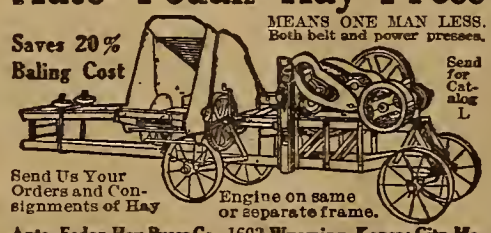
SEED WHEAT BULLETIN FREE

Valuable information about New and Tested varieties—Kharkov—Harvest Queen—Fultz, etc.—Timothy, Alfalfa, Clover and all field and grass seeds. Gives valuable planting instructions. Describes heaviest producing varieties—how best crops are grown. Gives money-making ideas about fall planting. Read it before you buy. No charge. Write today. American Mutual Seed Co., Dept. 1142, Chicago.

Auto-Fedan Hay Press

MEANS ONE MAN LESS. Both belt and power presses.

Saves 20% Baling Cost



Send for Catalog L

Send Us Your Orders and Consignments of Hay

Engine on same or separate frame.

Auto-Fedan Hay Press Co., 1602 Wyoming, Kansas City, Mo.

CIDER Making

Will Pay Some Man in Your Section

Will this man be you? Why not? Thousands are making Big Money with Mount Gilead Hydraulic Cider and Grape Juice Presses

We can show you how $1200 a year can be made in the cider business. Sizes 10 to 400 barrels daily. Hand or power. All power presses have steel beams and sills. We make cider evaporators, apple-butter cookers, vinegar generators, filters, etc. Fully guaranteed. Write to-day for catalog.

HYDRAULIC PRESS MFG. CO., 106 Lincoln Ave., Mt. Gilead, O.

SELF-OILING WINDMILL

With INCLOSED MOTOR

Keeping OUT DUST and RAIN—Keeping IN OIL

SPLASH OILING SYSTEM

Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear

OIL SUPPLY REPLENISHED ONLY ONCE A YEAR

DOUBLE GEARS — Each Carrying Half the Load

Every feature desirable in a windmill in the AUTO-OILED AERMOTOR

Gasoline Engines—Pumps—Tanks

Water Supply Goods—Steel Frame Saws

WRITE AERMOTOR CO. 2500 12TH ST., CHICAGO

Avoid Bee Stings

By Ruth C. Gifford

MANY amateur beekeepers don't guard against bee stings. A person should be dressed properly for the work.

Anyone can keep bees without getting stung if he will use a good smoker and wear a bee suit. The smoker can be purchased from any supply house, and the suit can be made in a couple of hours.

A bee suit for a man consists of a white muslin blouse and a wire bonnet, which are sewed together securely, and a pair of gloves. For a woman a pair of white muslin bloomers are added to the equipment needed for a man's bee costume.

The wire bonnet had better be secured from a supply house because the wire used is a larger mesh and easier on the eyes. It can, however, be made at home from wire mosquito netting. Sew together the ends of a piece of wire which measures 33 inches long by 10 inches wide. Use a round piece of muslin for the top, and bind the lower edge of the wire with muslin, to keep it from sticking the shoulders of the wearer. Then plait a six-inch wide curtain to the lower edge.

The blouse should be made very large, so it cannot possibly hamper the beekeeper. Measure the width across the shoulders and make the blouse double that width. The sleeves are long, and held around the wrists by pieces of elastic. The blouse is fastened around the waist with a drawstring. After it is finished, put on the bonnet and then the blouse. Have someone cut out the neck of the blouse until it fits comfortably around the bonnet. Then the curtain on the bonnet and the blouse should be sewed together securely.

The bloomers for the woman's costume are very loose, and so long that they will come down over the tops of high shoes. Drawstrings hold the lower ends of the bloomers securely in place around the shoe tops. Other drawstrings fasten the top of the bloomers around the waist. A man can tie the bottom of his trousers around his shoe tops.

The gloves can be bought from a supply house, or men's working gloves of

This inexpensive bee costume, consisting of helmet, blouse, gloves, and bloomers, kept this woman from being stung

goatskin can be used. A few puffs of smoke from the smoker destroys the odor of the leather. A three-inch strip of muslin sewed to the top of the gloves will prevent them pulling out from under the sleeves.

Anyone can make a suit like this because the main object is to sew the materials securely so bees cannot get inside the costume.

This suit is a little warm in hot weather, but it is not nearly as warm as bee stings. If a person uses ordinary care he practically is safe from bee stings. I myself cannot go near the bees unless I wear a bee suit, because they would sting me; but with this suit I am able to work with them. I made $200 profit last summer from my bees.

Don't work with bees on hot, damp days, because they are terribly cross. A beekeeper might not get stung, but there is no use in taking the risk. Don't work with them late in the evening, because they crawl and sting. Often they stay on the suit until it is taken off, and then sting the beekeeper.

If anyone gets stung by bees, give a dose of aromatic spirits of ammonia. The person should lie down and keep as quiet as possible. If badly stung, send for a doctor. Bee-sting poison affects the heart.

A Call to Your Grocer

will bring a package of

Grape-Nuts

A delicious, healthful food and a pleasing lesson in economy.

"There's a Reason"

FERRETS FOR SALE—Either color, any size, singles, pairs or dozen lots. Catalogue free. C. H. KEEFER & CO., GREENWICH, O.

Money-making farms

15 states, $10 an acre up; stock, tools and crops often included to settle quickly. Write for Big Illustrated Catalogue. STROUT FARM AGENCY, Dept. 2699, New York.

ALFALFA SEED $8.00 per bushel. Good purity and germination but dark color. Better grades for more money. Write for free samples and prices. Henry Field, Shenandoah, Iowa.

RAISE BELGIAN HARES FOR US.

Flemish Giants and New Zealands. Profits large. We supply stock and pay $3.00 each. Also Cavies. Squab Breeders and fur bearing animals. Instruction book and contract for dime. None free. Outdoor Enterprise Co., 73 Main St., Holmes Park, Mo.

MINERAL HEAVE COMPOUND In use over 50 years

CURES HEAVES

Booklet Free

$3 Package guaranteed to give satisfaction or money back. $1 Package sufficient for ordinary cases.

MINERAL HEAVE REMEDY CO., 425 Fourth Ave., Pittsburgh, Pa.

Wonderful Money Saving Fence Book. Over 150 Styles. 13¢ Per Rod Up Gates-Steel Posts-Barb Wire.

DIRECT FROM FACTORY-FREIGHT PAID

All heavy DOUBLE GALVANIZED WIRES. 13c per rod up. Get free Book and Sample to test.

THE BROWN FENCE & WIRE CO., Dept. 21W - - Cleveland, Ohio

25c

WILL BRING YOU

Farm and Fireside 6 mos.

AND

Our New 32-Page War Atlas

THIS Atlas contains halftone portraits of the great military men of the warring countries, there are also pictures of President Wilson, Secretaries Baker and Daniels, and other prominent Americans. The newly developed instruments of warfare are all shown in pictures, many of them taken during action. The caterpillar tank, the great surprise of the war, is shown in operation, anti-aircraft guns, mines, trench mortars, periscopes, the Lewis machine gun, gas masks, contact mines, star-rockets, search lights, Zeppelins, all are pictured, while uniforms and equipment of the troops of various nations are shown in photographs taken at the front. Then there are maps of Europe, France, Turkey, Germany and all other countries involved, twelve page and double-page maps in all.

If your FARM AND FIRESIDE subscription is paid ahead, we will extend your time six months. In ordering be sure to say you want "The World's Greatest War Atlas."

Send your order to

FARM AND FIRESIDE

SPRINGFIELD, OHIO

Farm Building

Repairing Concrete Tank

By J. E. Freeman

A MINNESOTA reader has a concrete tank, built three years ago, that during the past winter cracked near the bottom for almost its whole length when water froze solid in it.

The best method of making a permanent repair for such a tank is first to cut out the crack with a stone chisel to form a V-shaped groove about an inch wide and one and one-half inches deep. Clean the groove thoroughly to remove loose particles, and soak it with water. Mix a stiff mortar in the proportion of one sack of cement and one and one-half cubic feet of clean, coarse sand just passing a No. 8 screen, and ram this mortar into the crack with a calking chisel or similar tool. Smooth the surface with a trowel, cover the patch with damp sacking or wet sand, and keep it wet for a week. If the weather is mild a small amount of water in the trough will be helpful after the first three or four days. Should the wall be cracked clear through to the outside, patch the crack on the outside in the same manner.

A conical float or a smooth log placed in the tank during the winter will help to prevent future freezing from bearing out the walls again and causing the crack to reopen.

In building a new tank it is best to follow the method of construction whereby the inside of the tank is slightly smaller at the bottom than at the top, so the ice will raise itself up instead of bursting the tank.

Comforts for the Women

By E. W. Early

I AM a strong advocate of modern equipment for the modern farm and farm family. I emphasize "family," for the men usually manage to get hold of the most modern machinery as it is needed.

It does me lots of good to see a man blossom out some fine day with a nice new automobile. It seems to advertise to the world that easier times are at hand for those on that farm. But does it always mean this?

In Nebraska, where I live, I could cite many instances to show that this does not necessarily follow. One man I know, who is very properly proud of his new machine, has no other heating equipment than air-tight stoves in his home. And this is in a climate where it is not uncommon for the mercury to drop below zero. The bedrooms are entirely unheated. Water is carried from the pump, and all the waste water must be carried out by hand.

Electricity is a Willing Servant

In another home it is not deemed an undue hardship for the women-folk to carry all the water from a spring at the bottom of a steep hill, while the investment of $1,000 in a motor car is taken as a matter of course.

But what I started out to tell about was the household of a farmer who does not boast of a machine. A year ago when the lines of the local electric-lighting concern were run past his place, this man had his home wired and fixtures put in for electric lights. The convenience of modern lighting must have been a revelation to him, for a new venture was made and an electrically driven washing machine was installed. In the course of a few months electric irons and an electric vacuum cleaner followed.

These conveniences seemed only to whet the appetite for better and more comfortable home surroundings. Modern plumbing was shortly installed and the very best heating system obtainable was being put in.

Now, I realize that if some of us wait until some concern runs wires past our doors before we wake up to the possibility of putting some real conveniences in our homes, these conveniences will never get in.

While we buy, and very properly too, the most modern equipment for our own work on the farm, lots of us are prone to forget that home equipment has progressed just as rapidly as modern farm machinery. We do not take the time to consider what a difference in the comfort of our wives and daughters the expenditure of a few hundred dollars in plumbing and heating would make.

Heating and Plumbing First

Start in with the plumbing—kitchen sink, stationary wash tubs, and a bathroom, for there is surely some room that can spare a small slice for this purpose. In my own home we took a slice three and one-half feet wide from a bedroom and made a very comfortable bathroom out of that by placing the fixtures all in a row.

After that it is but another step to consider a real heating plant, one that will keep the whole house comfortable in winter. It will probably be the part of economy to have them both installed at the same time.

But as, once started, the home comfort idea is hard to stop, an acetylene or electric lighting system will probably follow. But let the start be made with some real plumbing and heating.

We have all had a wonderfully prosperous year. Why not declare an extra dividend and count wife, daughter, mother, or sister in on it? What would we do without their help? Don't you think they deserve it?

Covered Barnyard

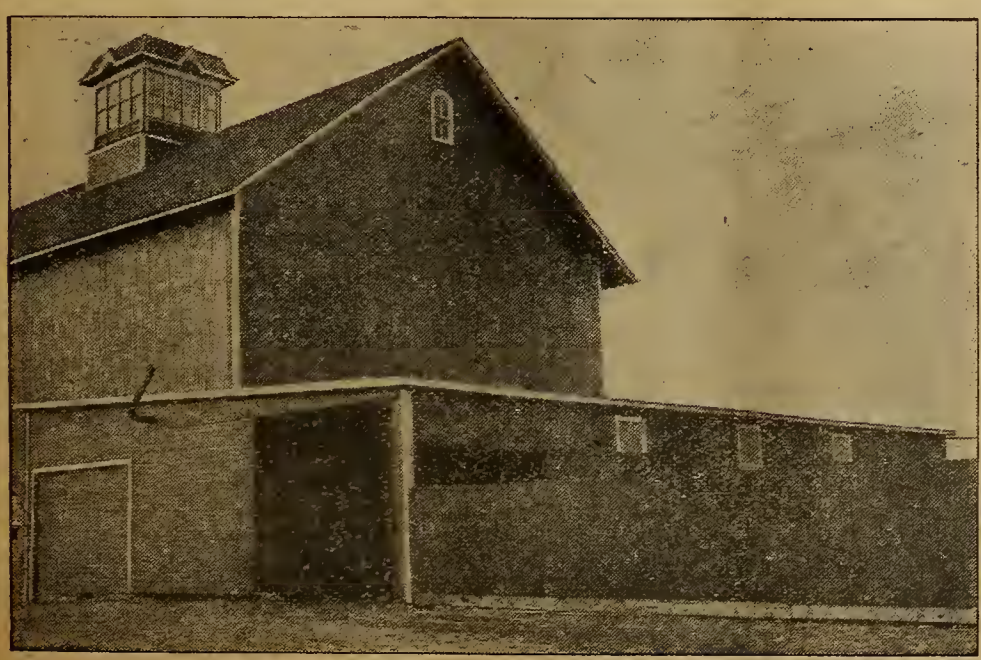
By Orin Crooker

A ROOFED-OVER and enclosed barnyard provides many advantages for both the summer and winter care of farm stock. A dairyman living near Beloit, Wisconsin, has made use of such a structure for several years. The building, which is 25x50 feet in dimensions, is built of matched siding and covered with corrugated galvanized roofing. Where it joins the barn the height is 15 feet. At the lower side it measures 12 feet. This allows doors of good height and permits driving in with all ordinary loads.

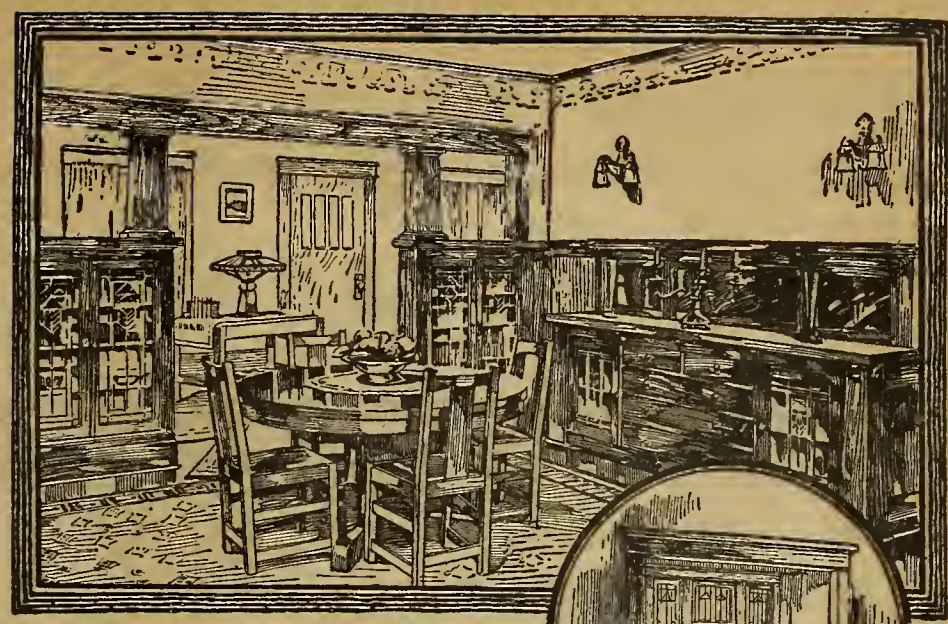
He has provided ample openings on all sides, so that in summer there is a plentiful circulation of air.

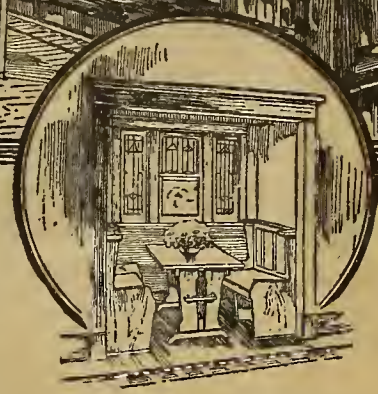
In winter, however, the enclosed shelter is especially valuable. It is entirely storm-proof and stock can be turned into it without exposure to snow, sleet, rain, or wind. A watering tank with a heater is at one end of the building where a hinged panel permits a section of the siding to be raised so that stock on the outside may also use the tank.

WALLBOARD for outdoor use is now on the market. It costs about a third less than lumber.



The doorways of this enclosed barnyard are large enough for wagons to enter, but may be closed in bad weather. The pipe seen in the picture is the chimney of the tank heater used for warming the drinking water in winter





BUILD a ready-furnished home. Look at this dining-room with handsome built-in sideboard and china closet colonnade. They give a dignity that movable furniture cannot lend. These are CURTIS Woodwork designs.

The dining-room above shows how CURTIS Woodwork looks in this home—a home shown in our Free Home Book of Plans. It is called the Varna—from "Better Built Homes" Vol. 3.

1866 CURTIS WOODWORK

"The Permanent Furniture for Your Home"

Doors—Windows
Window & Door Frames
Storm Doors & Windows
Screen Doors & Windows
Stairways
Newels
Sideboards
Colonnades
Bookcases
Mantels
Window Seats
Wall Panels
Ceiling Beams
Mouldings
Porch Columns
Porch Rail
Porch Balusters
Everything in Woodwork

Three things make CURTIS Woodwork distinctive. First, there are our plan books to help you in working out the plans for your new home. Second, there is the great variety of built-in furniture and the wide range of designs in woodwork. Yet all are produced in such quantity that, quality considered, they are most reasonable in price. Third, there is the woodwork itself. Made of selected woods, with many exclusive features of construction, by skilled woodworkers and cabinet-makers, we are proud to stamp each piece, after a final inspection, with our trade-mark, CURTIS.

Look for that mark when you go to your lumber dealer to buy woodwork. Get him to show you the big Curtis Catalog. See some house finished with CURTIS Woodwork. Get acquainted with us and our product. Start, today, by writing for your choice of our two home books—"Better Built Homes" Vol. 2, $2700 and down; Vol. 3, $2700 and up. Either is free.

Just Send the Coupon for a Home Book if You Expect to Build or Make Alterations.

The Curtis Companies, Service Bureau
1438-1538 S. Second St., Clinton, Iowa

Manufacturing and Distributing Plants at
Clinton, Iowa — Lincoln, Neb. — Minneapolis
Oklahoma City — Sioux City, Iowa — Detroit
Wausau, Wis. — Topeka, Kan. — Dayton, Ohio
Chicago

Eastern Offices at Pittsburgh and Washington

The Makers of CURTIS Woodwork guarantee complete satisfaction to its users.

"We're not satisfied unless you are"

The Curtis Companies, Service Bureau
1438-1538 S. Second St., Clinton, Iowa
Without obligation, please send me
.....
Name .....
R. F. D. ..... Town .....
State .....

APOLLO Galvanized Roofing

Highest quality Roofing for all classes of farm buildings. Made from the well known APOLLO-KEYSTONE Copper Steel Galvanized Sheets.

Supplied in all standard patterns of Formed Roofing and Siding. Fireproof, durable, reasonable in cost—accept no substitute. Look for the Apollo stencil with the added Keystone. These sheets are also unexcelled for Culverts, Silos, Tanks, Cisterns, Sheds, and all forms of exposed sheet metal work. Send for free "Better Buildings" booklet.

AMERICAN SHEET AND TIN PLATE COMPANY, Frick Bldg., Pittsburgh, Pa.

Straight Draw-Bar Pull
Maximum Pull—No Side Draft

The Parrett pulls same as horses—direct on the draw-bar. No lost power. Implements always under control of one man. This is one feature which makes the Parrett the superior light weight tractor.

Now used in
France
England
Russia
Denmark
Mexico
Cuba
Canada
Etc.

PARRETT TRACTOR — SPEAKS FOR ITSELF — ONE MAN — ALL PURPOSE

The Original High Wheel Tractor

imitated but not equalled. Operates on gasoline or kerosene for all field, belt or road work. Your inquiry will bring full details about this all purpose tractor.

Parrett Tractor Co., 430-E Fisher Bldg. Chicago, Ill.

(Distributors in all parts of U. S.)

Neōlin

TRADE MARK REG. U.S. PAT.OFF.

Better than Leather

Mr. Crozier wore his Neōlin Soles 11 months and they were still good.

The great question regarding Neōlin Soles is this: How much can you save by wearing them?

Some wearers write telling us of a *double wear.* The writer below speaks of a wear *four times* greater. While the photographs below show a six times greater wear.

But you will possibly find the average superiority somewhere between two and six times greater. Because the more popular the price of your shoes, the greater surplus wear Neōlin Soles show over leather soles.

But read this letter:

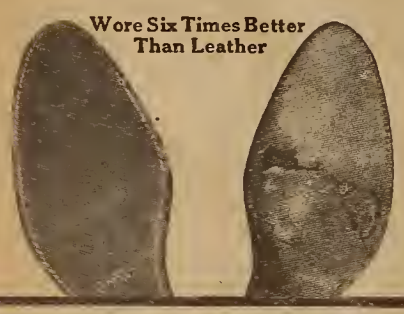
"I thought it might please you to know of my experience with Neōlin Soles. March 1st, 1916, I bought a pair of well known shoes. I went through both soles in a month. In getting them soled I was advised by a shoemaker to put on Neōlin, and let him do so. I have worn these soles every day since and given them lots of walking. And now after eleven months' wear there is not a hole through them yet."

(Signed) GEORGE E. CROZIER, Boulder, Montana.

Neōlin Soles are *not* rubber though they are as waterproof. They are true synthetic soles. Other better-than-leather qualities: A remarkable pliancy and velvet foot-ease. A won't creak or crack or scratch-the-floor quality. In black, white, tan. For grown-ups and children on new shoes. Also at shoe repairers and some retailers in Taps and Full Soles for old shoes. To protect from substitutes *mark* that mark—stamp it on your memory: Neōlin—

the trade symbol for a never changing quality product of

The Goodyear Tire & Rubber Co.
Akron, Ohio



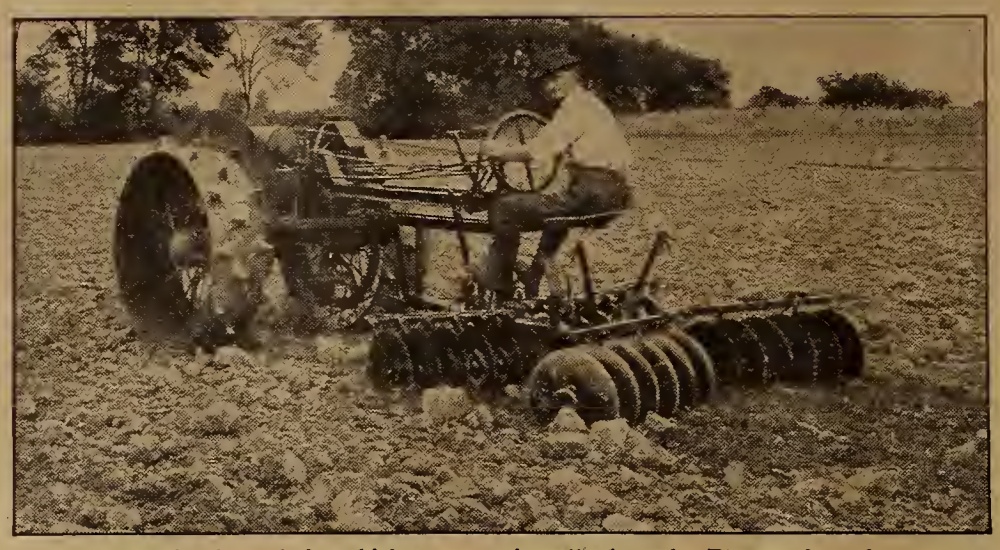
Neōlin Sole, to the left, worn one-sixth through on one foot of experimenter.

Leather Sole, to the right, worn clean through on other foot of experimenter.

Choosing a Tractor

Important Points of Construction to Consider

By GEORGE P. PEARCE



Double-disking is work for which a tractor is well adapted. Plenty of steady power is the chief requirement. The motor in this tractor develops 12 horsepower

AT ONE of the large tractor demonstrations last year I was impressed with the difficulty farmers had to contend with in picking out a tractor that would suit the conditions on their farms. The plowing demonstration itself was not of very much help because all the tractors were plowing satisfactorily and apparently having no difficulty or trouble, which could of course be expected, because every tractor was run by an expert. Talking with the various salesmen did not help things either, because each one was so full of praise and had so many good points to describe that the choosing became more bewildering than ever.

All this goes to prove that it is a mistake, and possibly a costly one, to go to a tractor demonstration with the idea of picking out a tractor unless the necessary requirements have been carefully and thoroughly figured out ahead. The first and most important thing to consider is the size of the farm, for upon that depends the size of the tractor to be purchased. An approximate guide for the number of plows the tractor should pull is to divide the number of acres that are plowed by 90, which gives roughly the number of 14-inch plows the tractor should pull. Of course, on the large farms this gives a figure that is greater than the capacity of the largest tractor, so obviously, in these instances, more than one tractor would have to be purchased.

On farms that require a 6, 8, or 10 plow tractor, it is advisable to consider the advantages of buying two or even three small tractors instead of one large one. The advantages of this are many: in case of a breakdown or engine trouble, only one half or one third of the plowing capacity is out of commission and the remaining tractor or tractors can be run longer hours, perhaps all night, and so no great loss need occur while the disabled tractor is put into running order again. Then, again, one tractor can be attending to some urgent belt work or hauling and yet the plowing can be continued.

Notice the Amount of Clearance

Of course, the disadvantages of two or three small tractors are that possibly more help will be required to run them, although the large tractor generally requires two men. Most of the small ones operate with one man. Then more room will be needed for storage and there is likely to be more expense for repairs and adjustments, so it is necessary to consider thoroughly the conditions on the farm before deciding on the large or small outfit.

Another thing to consider is whether the tractor will require special plows or pull any standard equipment. Generally the tractor that will handle standard equipment will give the most satisfaction.

After deciding upon the size of tractor to be purchased, the next thing to consider is the ability of the tractor to handle the loads under the conditions as they exist on the farm where it will be used. For instance, if the ground is likely to be wet during the plowing season, due to low ground or other reasons, then the tractor with large wide wheels should be picked out. Also, for these conditions, the tractor should have ample clearance, so if a wheel becomes badly mired there is still a chance to put rocks or planks under the wheel and let it pull itself out, whereas if the tractor has only nominal clearance it is likely to rest the frame on the ground just as soon as it mires. Then the power wheels will not "bite," but just idly churn round. Notice whether there is ample clearance for the belt, as in some farm machinery the belt pulley is rather low. If the pulley turns in such a way that the lower strand of the belt will be the pulling one, it will most decidedly be a point in its favor, for the power can be transmitted easier and with less wear and tear on the belt and machinery under these conditions.

The protection of the wearing parts against dust and grit is an important feature, for any bearings or rubbing parts that are exposed so dust gets to them cannot be expected to last very long, and replacements are expensive, not only in the cost of the part but in

Improvements in tractor design have made plowing a strictly one-man operation

the time required to install. There is another little thing that should be looked out for, and that is the position and convenience of the starting crank. On a cold morning it may be necessary to spin the motor, and a crank that is high up or in an awkward place is not going to help things any.

Convenience in getting at the various parts to make repairs and adjustments should be considered. There is no joy in having to pull a tractor half to pieces in order to take up the main bearings or connecting rods, for instance. There should not be any flimsy attachments unprotected, especially on the front end, as bushes and branches rub and drag by at times with sufficient force to get entangled and twist off any light parts. The wearing parts, and especially the ignition, must be well protected against rain and moisture.

The number of levers, pedals, and hand wheels that the operator has to attend to should be as small as possible, because he will have plenty to do in looking after the plowing, following the furrow, and seeing that the plows are operating right, without having any extra things to do. If the tractor is to be used where water is scarce or has to be carried from a distance, it is advisable to investigate the efficiency of the cooling system, for some outfits require a lot of water, whereas others run with very little daily additions.

The fuel problem needs careful attention, and there are three types of tractors from this point of view: the gasoline-burning tractor, the combination gasoline and kerosene, where either fuel can be burned and switching from one to the other can be done in a few moments, and finally the straight kerosene-burning type where only a little gasoline is used for starting purposes.

The first thought naturally is that kerosene is the only kind of fuel to be burned, as it is available and cheaper than gasoline. But no matter how attractive it may seem, sight must not be lost of the fact that only engines that are specially designed, correctly proportioned, and have the proper atomizing carburetor will give satisfaction. Otherwise carbon trouble, erratic running, and loss of power will result.

Simple Lubricating System Desirable

It is advisable not only actually to see the kerosene-burning tractor in operation and really burning kerosene, but to talk with owners who have run one of the same type through at least one plowing season. The combination type of tractor also has many attractive features, the principal one being that if during operation the engine starts to give trouble, or does not run quite right, then a quick switch to gasoline can be made, which in most cases will help out of the difficulty, and then when things have been adjusted and the engine is running smoothly a switch back to kerosene can be made, and so on.

Regarding the straight gasoline tractor, there is in its favor the fact that it is likely to be very reliable in operation and to operate under more adverse conditions than the average kerosene-burning outfit.

It will be more expensive in fuel, but remember that the cost of fuel is not the only expense to be considered, and it does not take much lost time to more than pay the difference in the cost of the two fuels. The matter of lubrication should also be studied. A tractor that has many individual oil holes to be oiled at frequent intervals is not likely to be as satisfactory as one with only a few, or, better still, one with a mechanical oiling system, provided it is not too complicated.

The method of lubricating kerosene engines should be well looked into, for it must be remembered that when the cylinder and piston become worn there will be leakages of kerosene into the crank case which will dilute and cut any oil there and greatly reduce its lubricating value.

The buyer should also find out the cost of repair parts and how quickly he will be able to get them in an emergency.

In closing, I wish to state that no particular tractor or style of tractor has been advised, for there are so many different conditions to be met with in the different farms of this country that for the present each farmer should investigate for himself and pick the tractor that is best suited on his farm.

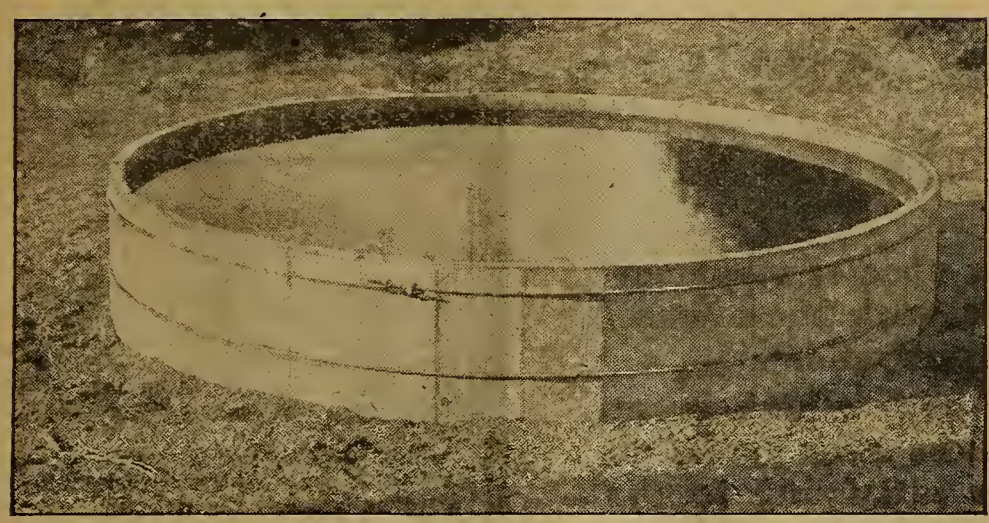
This handy-size tractor has a 20-horsepower motor, which enables it to do a great variety of belt work. It drives a circular saw with ease

W

Watering Tanks

Merits of the Different Kinds and Shapes

By D. S. BURCH



This watering tank is made of concrete staves bound by iron hoops. The bottom is of solid concrete

ONE of the chores that I well remember in my boyhood days was to pump water for the stock. Six hundred strokes of the pump were needed daily in ordinary weather, but in midsummer when pastures were dry and the stock was thirsty I used to shake hands with that old wooden pump upward of a thousand times a day. The tank was a home-made affair of wood, and if it was not kept pretty well filled it leaked more than usual—it always leaked some.

Later we installed a windmill, which helped matters considerably, but it was a good many years afterward before we replaced the old tank with a new one of galvanized metal. Cement was just beginning to come into use, and although we considered it, there were no cement tanks in our neighborhood that we knew of. It was winter time, and we had never done any cement work, so decided that the metal tank would be the best proposition; and it has given very good satisfaction. This was due to chance, however, more than any special ability, since we happened fortunately to get a reliable and well-made tank.

More lately, as the result of greater familiarity with metal products, I have recognized why our metal tank is apparently as good as new, while others that look just like it have worn out in a few seasons. When a metal stock-watering tank is used, it should be installed some distance from where the stock is salted, otherwise the salt will be carried on the mouths of the animals and the drippings will in time corrode the metal. There are farms, of course, where yard feeding is practiced, and in such cases the same results are obtainable by keeping the stock away from the water a short time after being salted. It is a little trouble but well worth while.

Keep the Seams Painted

Another way to add to the life of a metal tank is to paint the seams, both inside and outside and particularly on the bottom, with a good linseed oil paint. But do not use paint that is a product of coal tar. A linseed oil paint will preserve the tank and pay well for its small cost, but a coal-tar paint will bring about corrosion and shorten the life of the tank.

The best time to do the painting is when the tank is installed, though additional coats should be applied at intervals to insure long life. The durability of the metal used in the body of the tank depends mostly on the quality and workmanship, though the solder used on the seams and the strength of the bands, rivets, and angles are almost as important. To paraphrase an old saying, a tank is no stronger than its weakest spot, and the weakest spot in a cheap tank is the "hold" of the galvanized coating on the base sheets of metal.

The best quality tanks are made from heavy-gauge open-hearth material, coated uniformly with the best spelter. This coating is what we know as the galvanizing. "Pin holes" in the coating, blisters, cinder spots, scales, and other indications of poor material and workmanship will cause the galvanizing to flake off, expose the sheet, and rusting begins. To detect "pin holes" requires the trained eye of a galvanizing expert. But anyone can by careful inspection see many of the other faults, especially scale, blisters, and buckles, if they exist.

Look for Manufacturer's Name

The gauge or weight of the sheet metal is determined by weighing the sheet in the flat or by means of special gauges, but when the sheet is in the tank not even an expert can tell the quality or lack of quality, unless there has been such a glaring lack of skill as to be evident to even an inexperienced person. The solder used in tank construction should be at least 40 per cent tin and 60 per cent lead, though a better grade is composed of equal parts of tin and lead. Lead is cheaper than tin, but if more than 60 per cent of lead is used in tank solder the poorer the quality and the less satisfactory the tank will be. No one can tell by even the closest inspection of the finished tank what kind of solder has been used, nor can the average buyer judge the quality of rivets, bands, and angles. In buying a watering tank, the wisest course to adopt is to look for the name of the manufacturer and the gauge of the metal. These are stenciled on high-grade tanks made by manufacturers who have a reputation to sustain. Inferior tanks seldom are marked with the gauge of the metal or with the maker's name, though they sometimes have a fancy trade name.

The gauge signifies the weight of the metal, and is governed largely by the size of the tank. Standard sizes of farm tanks are made of 20-gauge, which weighs 26½ ounces a square foot. Large and extra large [CONTINUED ON PAGE 15]

Standard sizes of the best metal troughs are made of 18 or 20 gauge stock. Lighter weights are neither as durable nor as strong

$1185 *Motorize Your Farm*

F. O. B. Factory.

"One or more tractors on every farm will help toward intensive farming, and will help to solve the labor problem."—J. Ogden Armour in the Saturday Evening Post.

The country demands that your farm—every farm in the land—produce a maximum yield.

This is possible, even in the face of the labor shortage that confronts you. The genius of Rollin H. White has made it so—made it practical for you to motorize your farm. For he has built the one tractor that can be operated profitably on almost every farm.

That tractor is the *Cleveland*. It is the first practical small unit machine. It is the machine for which you have been waiting.

The Cleveland *crawls on its own tracks*, so it will not stick, mire or pack the soil.

Possessing 600 square inches of traction surface, it will go anywhere—over rough and smooth, around hill and over dale, through sand and over wet land. And work—one Cleveland does more actual work in a day than three three-horse teams and three men.

In proof: a Cleveland will pull two fourteen-inch plows and with them turn up eight to ten acres a day of the finest, straightest furrow you ever saw. And with minimum fuel expense.

The Cleveland is built to stand work—hard work. It is built of best materials, under the supervision of Rollin H. White, one of the country's foremost truck designers. The gears are identical with those used in finest trucks. They are enclosed in dirtproof, dustproof cases. The Cleveland steers by the power of its engine. A light touch on its steering wheel sends it in the desired direction.

Developing 12 H. P. at its drawbar and 20 H. P. at its pulley, the Cleveland has ample capacity for every power requirement of the farm.

Cleveland Tractors are in actual use the country over. They are increasing farm production and lowering its cost. They are offsetting the existing lack of labor. They are returning their owners a profit.

You need a Cleveland. And you need it now. Write for full details of construction and performance. Let us show you what a Cleveland can do for you—the range of its usefulness is amazing. Address Dept. T.

THE CLEVELAND TRACTOR COMPANY, Cleveland, Ohio

Only $2 Down
One Year to Pay!
$29

Buys the New Butterfly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. **Guaranteed a lifetime.** Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

ALBAUGH-DOVER CO. (12)
2139 Marshall Blvd. CHICAGO
100,000 now in use

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

will reduce **inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly** as it is a positive antiseptic and germicide. Pleasant to use; **does not blister** or remove the hair, and you can work the horse. $2.00 per bottle, delivered. **Book 7 M free.**

W. F. YOUNG, P. D. F., 284 Temple St., Springfield, Mass.

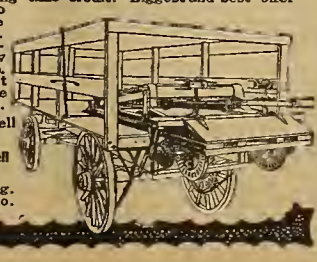
Keep Your Wheat Safe From "Winter Kill"!

Millions of bushels lost last year by "winter kill!" Send me a postal at once! Find out how a mulch of *shredded straw* absolutely assures big crops of winter wheat! 50,000 happy farmers know it's a fact! 5 to 10 bushels per acre increase! Make big profits at prevailing high prices! Prevent soil blow!—drouth! I have facts that will amaze you!

SIMPLEX STRAW AND MANURE SPREADER

30 DAYS FREE TEST!

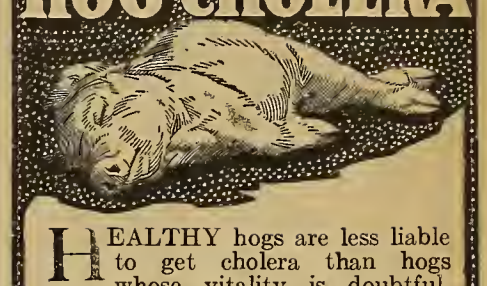
Learn about my famous machine! Only combination straw and manure spreader on the market. Shreds straw and manure. Spreads four times faster! 25 feet at a time! 20 acres a day! Fits any high or low, iron or wood wheel hay frame or header barge. Lasts a lifetime! Write at once. I'll send my amazing low war time price! Free trial! Long time credit! Biggest and best offer ever made. Two machines at the price of one. Special price reduction to a few live agents. Write me at once before prices advance.



Manson Campbell
President

Manson Campbell Co.
768 Traders Bldg.
Kansas City, Mo.

You Can Control HOG CHOLERA



HEALTHY hogs are less liable to get cholera than hogs whose vitality is doubtful. The Government recommends the use of a hog tonic to keep your herd in trim. Feed Blue Bag Hog Tonic as a preventive *before* they get worms or cholera. Then you can keep disease out of your herd; you can prevent and control it.

No matter how healthy your hogs seem to be, *take no chances*. Blue Bag Hog Tonic will help them pile up weight. Raising hogs for market is a safe and profitable business *only* when you can control cholera and other diseases in your herd.

BLUE BAG Hog Tonic is one of three hog remedies we offer.

Blue Bag Hog Regulator contains all of the ingredients of Blue Bag Hog Tonic with the addition of worm expelling ingredients. We recommend Blue Bag Hog Regulator when you have proved to yourself that your hogs are starting to have worms.

If your herd is real wormy and the hogs are becoming thin, **wait no longer,** but take them off feed and water and give them Blue Bag Worm Expeller.

You should have a sack of each of these hog remedies in your barns at all times.

For further information write for our Hog Regulator Book No. 7282F. It's free. Your copy is waiting for you.

Sears Roebuck and Co.
CHICAGO

CHANDLER SIX

Chandler Records Are Owners' Records

Not to our knowledge has a professional motor car driver ever made a record with a Chandler Six.

But all the thousands of owners of Chandler Sixes, every day, are making the kind of records that count. Records of satisfactory service.

The Chandler Company has never built a racing car. Chandler owners do not want racing cars.

The 55 to 60 miles per hour speed that *every* Chandler car will do is speed much greater than you would ever ask for.

The Chandler Company has never built a special mountain-climbing car with short wheel base and low gear ratio.

The *ease* with which *every* Chandler climbs steep grades on high gear is satisfying to the Chandler owner.

The Chandler Company has never supplied any Chandler dealer anywhere with a special gear ratio for demonstrating purposes.

What any Chandler Six does *your* Chandler Six will do.

The manufacturer of *one* six can make just as big *claims* as the manufacturer of any other six. But

The Chandler is a Fact-Car, Not a Claim-Car, and These Are Facts, Not Claims

There is no other six more flexible in control, more responsive to your every demand, than the Chandler.

There is no other which will pull hard grades on high with greater ease.

There is no other so economical in operation.

There is no other which embodies in its design and construction so many features characteristic of high-grade high-priced motor cars.

There is no other of more beautiful body lines or greater riding comfort.

FIVE BEAUTIFUL BODY TYPES

Seven-Passenger Touring Car, $1595 *Four-Passenger Roadster, $1595*

F. O. B. Cleveland

Choose the Fact-Car For Your Car

Dealers in All Principal Cities and Hundreds of Towns

Write For Catalog Today

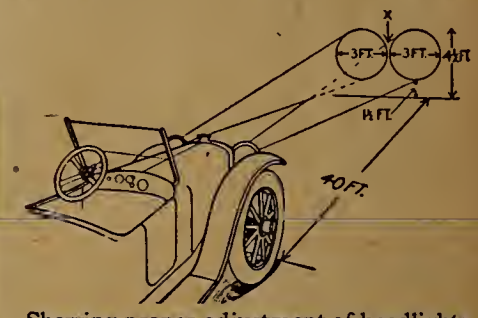
CHANDLER MOTOR CAR COMPANY, Dept. DD, Cleveland, Ohio

Focusing Lights

By W. V. Relma

THE matter of focusing lights is one which causes motorists a great deal of annoyance. All modern electric lights are equipped with some method of adjustment so that the light can be made to throw a clear strong ray where desired.

This adjustment consists of some method of lengthening or shortening the distance between the light bulb and the reflector, as desired. Usually the means for doing this is easily understood and consists of a threaded holder for the bulb with a lock nut for securing the holder in the position arranged.



Showing proper adjustment of headlights

A method of finding out just how each lamp is operating, and of having a definite basis upon which to do the adjusting, is shown in the diagram, which explains itself.

It will generally be found that one of the headlights has a tendency to tilt in a direction other than straight ahead. Some makes of cars have provided a means of adjustment that will let this be corrected. Where such a method is not provided it will be necessary to use a heavy monkey wrench for bending the lamp supports to the desired angle.

Tire Boots

A BLOW-OUT patch, or boot, is one which is placed either inside or on the outside of a casing to prevent the inner tube from blowing out. If the tire carcass has a weak spot it should of course be vulcanized if the tire is worth it. But if the tire is so badly worn or damaged as not to be worth vulcanizing, a blow-out patch may be used to strengthen the weak point. There are several kinds in general use.

The "hook on" kind, as the name implies, is a type that hooks on over the tire around the rim of the wheel and securely reinforces the fractured place in the casing. These patches, however, make a rather rough-riding proposition.

Popular styles of tire boots

Every time the wheel goes around and the patch comes in contact with the ground, a distinct jolt is felt by the occupants of the car. A similar boot is also made in the "lace on" style—that is, it can be laced on over the bad place in the casing by a lace which passes through metal eyes in the same manner that a shoe is laced.

Blow-out patches inserted inside the casing prevent the tube from coming in contact with the broken fabric of the casing, and also from protruding through the opening. Some of these are made with flaps which are secured under the rim of the wheel as the tire is applied. This is the type most generally used. Another kind of inner patch is one which is laced on or fastened around the tube and prevents any bulge or contact with the fractured casing. The type of boot that is applied on the inside of the tire does not prevent the entrance of water and sand, and this soon injures the tire further. Strong sections of old casings make serviceable blow-out patches when the bead is removed and the edges are thinned down.

In times of emergency a towel can be pressed into service as a blow-out patch.

Henry Pendergast, Phoenix, N.Y., Farmer and Holstein Breeder, won Amateur Championship of N. Y. State three times—International Championship once.

A World's Record

He uses an ITHACA GUN

Catalogue FREE

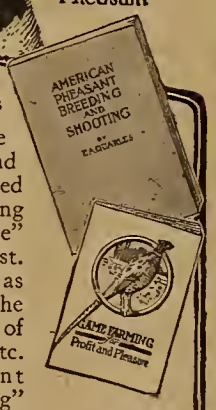
Double hammerless guns, $24.00 up.

Single trap guns, $85.00 up.

Address BOX 102

ITHACA GUN CO. ITHACA, N. Y.

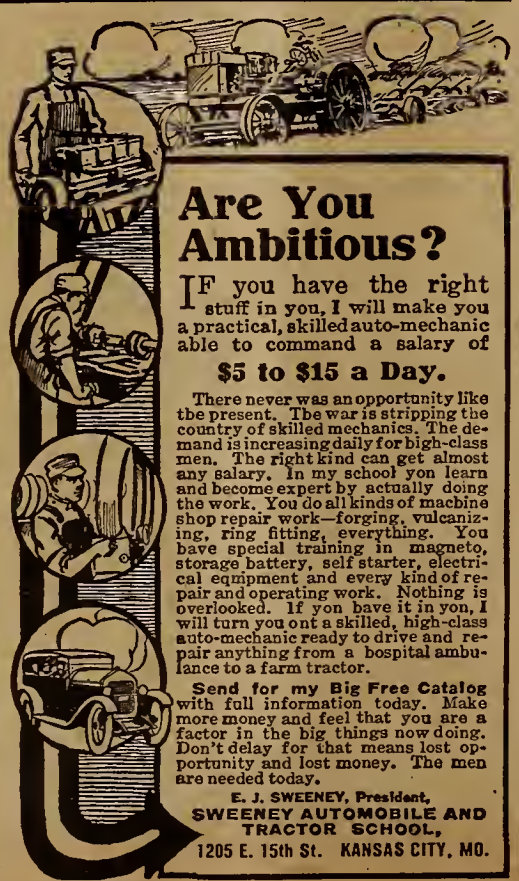
Ring-necked Pheasant



Write for These Books

They tell all about game farming—the profit and pleasure to be obtained from it. "Game Farming for Profit and Pleasure" is sent free on request. It treats of the subject as a whole; describes the many game birds, tells of their food and habits, etc. "American Pheasant Breeding and Shooting" is sent on receipt of 10c. in stamps. It is a complete manual on the subject.

HERCULES POWDER CO.
1032 Market Street
Wilmington Delaware



Are You Ambitious?

IF you have the right stuff in you, I will make you a practical, skilled auto-mechanic able to command a salary of

$5 to $15 a Day.

There never was an opportunity like the present. The war is stripping the country of skilled mechanics. The demand is increasing daily for high-class men. The right kind can get almost any salary. In my school you learn and become expert by actually doing the work. You do all kinds of machine shop repair work—forging, vulcanizing, ring fitting, everything. You have special training in magneto, storage battery, self starter, electrical equipment and every kind of repair and operating work. Nothing is overlooked. If you have it in you, I will turn you out a skilled, high-class auto-mechanic ready to drive and repair anything from a hospital ambulance to a farm tractor.

Send for my Big Free Catalog with full information today. Make more money and feel that you are a factor in the big things now doing. Don't delay for that means lost opportunity and lost money. The men are needed today.

E. J. SWEENEY, President,
SWEENEY AUTOMOBILE AND TRACTOR SCHOOL,
1205 E. 15th St. KANSAS CITY, MO.

Dairying

Pumpkin Seeds as Feed

By B. F. W. Thorpe

"WILL the seeds in pumpkins and squash fed to cows two and three times each day cause any trouble?" asks a California dairyman.

Fed to cows in large quantities the squash and pumpkin seeds overstimulate the kidneys. Where only a moderate quantity of these vegetables is given, they do not injure the cows. A half-bushel of pumpkins or squashes fed in two or three feeds daily will not be injurious even if the seeds are left in. If more than this is fed, take the seeds out before feeding.

Smooth Cottage Cheese

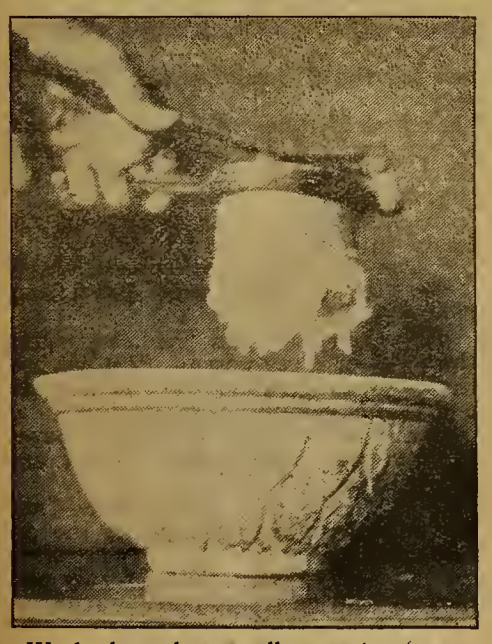
By Byron S. Paul

THE person who has a regular supply of skim milk can add considerably to his profits if he will market it in the form of cottage cheese. The demand for this product is always active in city markets. Many people do not purchase

Hang up in cheesecloth bag until dripping ceases

it, however, owing to the inferior quality often offered for sale. The following method of preparation will give excellent results:

After the milk has soured enough to form a mass (clabber) it should be placed in a moderately warm oven and



Work through a small press to give a smooth consistency

gradually brought to a temperature of about 90 degrees. Granite pans about four inches deep and holding three or four quarts are the most convenient for this purpose.

The oven door should be left open during the heating process, and the pans containing the clabber placed on an upper grate.

If a cheese of soft consistency is desired care must be taken that the clabber is not overheated, as that will toughen the curd. Stir the mass occasionally with the hand and when it feels comfortably warm, not hot, remove from the oven and allow it to cool.

This cooling process retains the fats in the curd which would otherwise drain away.

A dairy thermometer will be found of great assistance in bringing the clabber to the proper temperature. When cool, pour the clabber into coarse cheesecloth bags and hang up to drain until dry, after which the curd is ready to be mixed with milk and cream to the consistency desired.

When hanging the clabber up to drain, make a slip noose at one end of a heavy piece of twine to place over the mouth of the bag. Keep the twine for this purpose, as it will save time and trouble.

A smooth, velvety product will be secured by working the curd through an ordinary 10-cent fruit press before mixing.

By adding two tablespoonfuls of sweet cream and one-half pint of whole sweet milk to one pint of the curd, a soft cheese is produced. Mix the cream in first and season with one-half teaspoonful of salt, stirring thoroughly. The consistency of the finished product can be varied by using more or less milk, as preferred.

Watering Tanks

[CONTINUED FROM PAGE 13]

tanks are constructed of 18 and 16 gauge respectively. If the metal is lighter than 20-gauge the chances are that the tank will be short-lived.

For watering horses and cattle and for general farm use, either a round tank or an oblong tank with round ends is advised. Square-end tanks may result in injury to stock by reason of the corners. Nor are square-end tanks as strong or as economical in proportion to capacity as round or round-end tanks. A round tank 5 feet in diameter and 2 feet deep will hold about eight barrels of water, and is a convenient size. An oblong round-end tank 2½ feet wide, 2 feet deep, and 8 feet long will hold practically the same amount.

Value of Overflow Pipe

Metal tanks are generally set directly on the ground. This gives ideal support, and contact with the ground will do no harm to a good tank. An overflow pipe to carry off the surplus water will help to keep the ground around the tank dry.

A tank heater should be used in winter to prevent freezing and for taking the chill off the water, which makes it much better for the stock than cold water. Among the outstanding merits of metal tanks are these: They are easily installed, portable, and will stand considerable hard usage without leaking. Wood-stave tanks have similar advantages but cannot be left empty in hot weather without resulting in the wood's shrinking, causing leaks. This disadvantage has been overcome by the introduction of cement staves, held together by hoops similar to those used for stave silos.

Cement-stave watering tanks require no forms, and apparently the only vulnerable part about them is the durability of the hoops. They will also withstand considerable ice pressure. But as far as I have been able to learn they are made only in round shapes.

Silo Forms for Concrete Work

Solid concrete tanks, on the other hand, may be of any size, shape, or style, and when the inside measurements are smaller at the bottom than at the top, such a tank will withstand hard freezing of the contents without injury. Except in very small sizes, concrete tanks are not portable, and they also require considerable care to make them thoroughly water-tight. For a well-made rectangular concrete watering trough 3 feet 2 inches by 8 feet in outside dimensions, 2 feet high above the ground and surrounded by 2½ feet of concrete pavement, here is an average bill of material: 18 sacks of Portland cement, 1¼ cubic yards of sand, 1¾ cubic yards of pebbles or broken stone, and 33 pounds of ¼-inch round steel rods for reinforcement.

Such a tank when well made is everlasting. Install the inlet and drain pipes below the frost line and have them come up inside the tank. This keeps them out of the way of stock, and also protects them from freezing. Circular concrete tanks are commonly made with silo forms, and when putting up a solid concrete silo it is a good plan to make the water tanks when the forms, materials, and men are all on hand.

We hear a great deal about the proper feeding of farm live stock, but with water the cheapest and most profitable thing that an animal takes into its stomach, a little attention may well be given to proper watering as well. Stock should drink a little at intervals while feeding. Have their water warmed in winter, and protect it from dust and trash in summer.

EDITOR'S NOTE: For specifications and directions for making cement water tanks or for other information on tanks of any kind write the Building Editor, FARM AND FIRESIDE, Springfield, Ohio.

Save the Dollars
Punctures Cost You!

Get ready *now* to make *permanent, lasting* tire and tube *repairs* along the road or wherever you are. Don't waste another cent on make-shift repairs—on cementless patches that are sure to slip just when you need them most. *Weld* patches over punctures—*weld* new, live rubber into your casings—*save* heaps of time and money with

SR. $2 MARVEL VULCANIZERS JR. $1

MARVEL JR. VULCANIZER will save you 90c out of every $1.00 puncture repairs cost. No gas or alcohol is used. Chemicalized discs furnish exactly the right heat to *weld* patches over punctures that will outlast the tube itself. Less than five minutes for whole operation. More than 500,000 MARVEL JUNIORS already sold. Buy yours today. Repair first three punctures you get. If not absolutely satisfied, return outfit and get your money back.

Double Your Tire Mileage with Marvel Sr. Vulcanizers. *Weld* new live rubber into tread cuts, sand blisters, nail holes and other injuries. Save $1.00 to $2.00 on every tire repair. Mend tube blowouts good as new. Outfit furnished with material for large number of repairs. Buy from your dealer today or pin a $2.00 bill to the coupon and mail it now.

The Marvel Accessories Mfg. Co.
7277 St. Clair Ave.,
Cleveland,
Ohio.

Money back any time you are not satisfied

MAIL THIS COUPON NOW!!
THE MARVEL ACCESSORIES MFG. CO.
7277 St. Clair Ave., Cleveland, O.
According to your money-back guarantee send me one Marvel Jr. Vulcanizer outfit all charges prepaid. I enclose $1.00 herewith. ($2.00 for Marvel Sr. Vulcanizer outfit.)
Name
Address
State
Dealer's Name

FARMERS HANDY WAGON

Low steel wheels, wide tires, make loading and handling easier. We furnish Steel Wheels to fit any axle, to carry any load. Plain or grooved tire. Catalogue sent free.
EMPIRE MFG.CO., 368, Quincy, Ill.

KEROSENE ENGINES
OTTAWA LATEST DESIGN

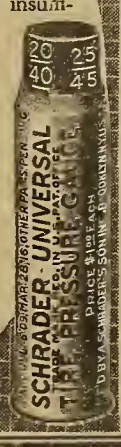
Durable, Powerful, Reliable, Massive. Built to last; to do hard, heavy work. Uses Cheapest Fuel. Pulls 25 to 50 per cent over rated H-P. *3 Months Trial. Easy Terms.* Sizes 1½ to 22 H-P. Easy to Start. No cranking. No batteries. 10-Year Guarantee. Most practical engine ever built. Engine book free. A Postal brings it. Write today.
THE OTTAWA MANUFACTURING COMPANY, 1151 King Street, Ottawa, Kansas.

25% More Miles per Gallon

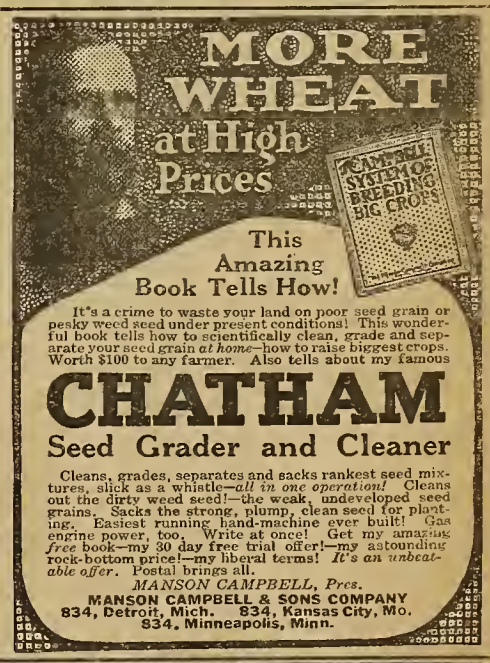
With gasoline selling around 30c a gallon, it should interest you to know that tires that are insufficiently inflated need 25% more gasoline to pull them along the road than tires that are inflated to the right pressure. With a

Schrader Universal Tire Pressure Gauge

you can keep your tires inflated to the right pressure.
Price in U. S. A. One Dollar.
Ask your dealer to show you the SCHRADER UNIVERSAL PUMP CONNECTION also. It makes tire-pumping and tire-testing easy.
A. SCHRADER'S SON, Inc.
801 Atlantic Ave.
Brooklyn, N. Y.



MORE WHEAT at High Prices



This Amazing Book Tells How!

It's a crime to waste your land on poor seed grain or pesky weed seed under present conditions! This wonderful book tells how to scientifically clean, grade and separate your seed grain *at home*—how to raise biggest crops. Worth $100 to any farmer. Also tells about my famous

CHATHAM Seed Grader and Cleaner

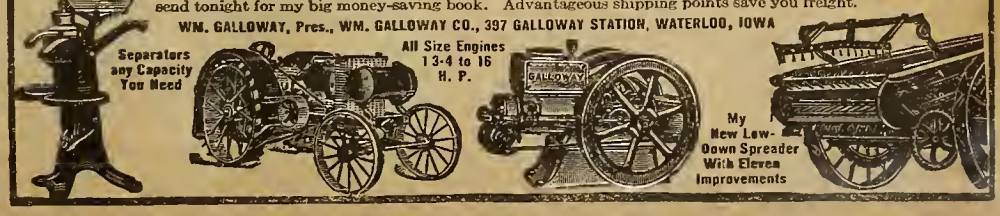
Cleans, grades, separates and sacks rankest seed mixtures, slick as a whistle—*all in one operation!* Cleans out the dirty weed seed!—the weak, undeveloped seed grains. Sacks the strong, plump, clean seed for planting. Easiest running hand-machine ever built! Gas engine power, too. Write at once! Get my amazing *free* book—my 30 day free trial offer!—my astounding rock-bottom price!—my liberal terms! *It's an unbeatable offer.* Postal brings all.
MANSON CAMPBELL, Pres.
MANSON CAMPBELL & SONS COMPANY
834, Detroit, Mich. 834, Kansas City, Mo.
834, Minneapolis, Minn.

Get My New Patriotic Prices!
On Spreaders — Tractors — Engines — Separators

Find out and satisfy yourself how much you can save by getting your farm implements direct from Galloway—the maker. This direct dealing is actually buying at wholesale, and even less, and saves you 25% to 50% on everything you need on the farm—Spreaders, Tractors, Engines, Separators, Wagons, Implements, Vehicles. I'll tell you why you can save by direct buying in my big, free book. I'll also tell you where the extra money goes—the money you save by dealing direct with the manufacturer.

Write for My Free Book That Keeps the Prices Down

It's the greatest bargain book ever published, and will save my farmer friends thousands and thousands of dollars. Write me for the book today. A postal will do. Let this book be your buying guide and save you $200 to $500 on your summer purchases. Don't hesitate. Don't put it off—but send tonight for my big money-saving book. Advantageous shipping points save you freight.
WM. GALLOWAY, Pres., WM. GALLOWAY CO., 397 GALLOWAY STATION, WATERLOO, IOWA



Unexpected complications face us at every turn in the swiftly changing situations, which lead at last to the fatal sealed room

The Sealed Room

Happiness is Born in the Shadow of a Tragedy

By EDWIN BAIRD

PART II

THIS IS THE WAY IT BEGAN: Tom McKay, a young stockman, comes to Chicago in quest of adventure and romance. Just as he is about to give up his plan in despair, he meets a girl with wistful eyes in front of a theater. His hope of winning her interest is dashed when a flashily dressed young man comes up and her greeting shows that she has been waiting for him. Tom gets on a street car, resolved to take the first train home. The girl urges her companion to do something he does not wish to do, and he finally leaves her angrily for the theater, and she takes a car going in the same direction Tom McKay had traveled shortly before.

TOM had journeyed ten blocks or more before perceiving that he, in his haste, had taken the wrong street car: he was traveling north when he ought to be going south.

Alighting at the next corner, he beheld a *milieu* of garish saloons, cheap hotels, and white-front restaurants. The same note was struck here as in the down-town district, only it had a more brazen tone.

He cast his gaze along the noisy thoroughfare, and it was then he saw the shabby gilt sign: WAH SING LO.

It adorned the second-floor level of a disreputable building, and over the dingy door below, a yellow-and-red glass sign, illuminated by a flickering gas jet, proclaimed the upper region of a Chinese eating place.

Now, Tom McKay, for all his periodical trips to Chicago and his thirty years of bachelorhood, had never tasted Oriental food. Moreover, his train would not leave for at least two hours. He crossed the street, ascended the narrow staircase, and entered the establishment of Wah Sing Lo.

It was a queer-smelling, dimly lit place, and, since the hour was unripe for North Clark Street, it was totally devoid of patrons. Tom took a seat at one of the greasy marble-topped tables, and a shriveled, wrinkled little Chinaman unwrapped himself from a high stool behind the fly-specked cigar case, padded across the floor in a catlike fashion, and stood awaiting orders.

Tom drew a coffee-stained menu from between a bottle of tomato ketchup and a vinegar cruet, glanced about him, then bent a puzzled gaze upon the foreign words on the bill of fare. And then, for no apparent reason, there came between him and these meaningless words the dark blue eyes of a girl, and the eyes seemed wistful and full of sadness.

Strange, truly! And yet not half so strange as that which swiftly followed: he passed his hand before his eyes as if to erase the vision, and when he drew his hand away he saw, not two rods distant, the girl herself!

There could be no doubt of it. He would have known her in a million. She stood near the cigar case, glancing about in a frightened way, and even in that moment of mental turmoil he remarked an increase in her nervousness.

Himself agitated, he resumed contemplation of the menu, affecting to be oblivious to her. But his heart was pounding tumultuously, and the uninviting room wherein he sat was suddenly glorified. Her inexplicable presence had changed everything.

He looked up into the expressionless face of the Chinaman, and smiled in sheer exuberance: "Are you Wah Sing Lo?"

The Mongol nodded silently. His face was a yellow mask.

"Well, Mr. Lo, I think somebody wants to see you over there."

Without so much as a glance toward the girl, Mr. Lo answered tonelessly:

"I know. She wait, all light. What you want—huh?"

"See what *she* wants first," said Tom.

Still the Chinaman displayed no interest.

"Nelly mind gal. What you want eat—huh?"

Tom flung the menu on the table and half rose from his chair. At the same moment the girl came toward them, and when she drew near a new delight surged in his veins—for she couldn't disguise the recognition which leapt to her eyes when she saw him.

Ignoring his presence, however, she addressed the Chinaman. At their first words Tom saw that they knew each other.

"Lo," she said in her soft, musical voice, "I've come for Dora. Where is she?"

Lo was swabbing the table with a dirty towel, his back toward her.

"Nelly mind Dola. Dola all light. You mind own business."

"I've come to take Dora home, Lo."

"Mind own business."

"Is she up-stairs?"

"Mind own tamn—"

At this juncture Tom entered matters—and entered zestfully. Like the jaws of a steel trap his sinewy fingers closed on the Chinaman's shriveled neck.

"Speak civilly to this lady," he ordered, "or I'll shake the life out of you!"

With a dexterous movement Lo wriggled free and backed hurriedly away, his yellow face livid with anger and fright. He pointed a trembling talon at the door.

"Get out!" he croaked hoarsely. "Cheap skate! Get out!"

Ignoring him, Tom turned to the girl.

"I gather you're looking for someone here," he said. "If I can help you—"

The girl flushed, and stood hesitating, evidently reluctant to accept help from a stranger and yet in dire need of that help.

"I—I—yes. A friend," she stammered, "up-stairs. If you—if you—"

Something of her predicament dawned on Tom, and he interjected respectfully:

"It really isn't safe for a woman to be alone in a place like this. Can't I find your friend for you?"

The girl nodded mutely, and they started toward the rear. Neither knew, of course, that Lo was signaling savagely, behind their backs, to another Chinaman who stood in the kitchen doorway, and who, as it chanced, failed to observe these signals.

As they approached, this second Oriental drew from his blouse a bit of soiled paper on which was penciled a street address, and silently gave it to Tom. Lo uttered an angry sound and, still unnoticed, crept stealthily in their direction, a murderous expression distorting his yellow face.

Tom hastily scanned the writing on the paper and handed it to the girl.

"What do you make of it?"

She, reading, was palpably puzzled.

"It's only a block away—the next street south," she said, knitting her pretty brows over the lead-pencil scrawl. "But—that's all I know about it."

"What next?" he asked.

"I think we'd better go up-stairs."

As they moved toward the narrow stairway beyond the kitchen door, the second Chinaman began chattering in his native tongue and, gesticulating excitedly, essayed to bar their way.

Disregarding him, they attempted to ascend the stairs, and in that instant Lo darted forward, as swift and silent as a panther, and flung himself on Tom's back with the ferocity of a wildcat. Simultaneously the other Chinaman joined the conflict.

During the violent struggle which promptly ensued, the girl stood on an upper step, staring wide-eyed at the grappling men, both hands flattened against her cheeks. And she saw her unknown champion seize one of his antagonists around the waist and hurl him headlong down the stairs, and then, with a well-directed blow, he sent the other Chinaman reeling after.

"Quick!" he panted. "Up the stairs!"

And now they were scuttering up the dark passageway, and the rickety door at the top admitted them to a low-ceilinged corridor, rank, foul, and excessively hot, and coated with soot and cobwebs. A burning gas jet, turned low, shed a wan light on the squalor, and cast a pale gleam eerily along the blackened walls.

And they perceived that its flickering flame revealed the figure of a queer little man—so queer, indeed, as to seem an apparition—coming toward them along the hall. Balanced precariously atop his head was a girl's flamboyant picture hat, such as one might find at a bargain sale in a department store, and he carried in his arms a huge, misshapen bundle, loosely tied in a bedsheet.

When a few feet away, he lowered his burden and gaped at them over his black-rimmed eyeglasses, which straddled the tip of his aquiline nose. The action, though slight, dislodged his feminine headgear, and it fell to the floor, unheeded. He was totally, glaringly, funnily bald. His dome not only was quite devoid of hair, it was polished till it shone like an ostrich egg and he was clad in clerical garb.

"Dear, dear!" said he in a surprisingly deep voice, and plucked a large white handkerchief from his ministerial coat tails. "Dear me!" he repeated, applying the handkerchief to his perspiring brow. "What's this? What's this?"

Tom, staring curiously at the odd little man, acutely aware of an increasing mystery, mentally echoed the question.

If Packingtown was a strange place in which to sprout the seed of romance, how much stranger still to find a minister in a spot like this!—and no ordinary minister, either, but a bald-headed minister wearing a girl's hat and decamping, evidently, with a sheet load of plunder!

Marvelous things, truly, were happening on this summer's night!

Part of the mystery, at any rate, was speedily dissolved. The bald little man introduced himself, in nervous agitation, as Rev. Philip Webb, who lately had assumed control of the Star of Good Hope Mission for Friendless Girls.

"Are you two, I wonder, looking for Miss Dora Kirk, the unhappy young woman who formerly lived here?"

They told him that they were, and Tom's companion added, a world of anxiety in her gentle voice:

"You say she '*formerly* lived here.' Isn't she living here now? She was here this morning, I'm sure."

"Only two hours ago," said Rev. Webb, "we took her to our mission—a frail and broken flower. But I'm happy to say," he went on, vigorously mopping the beads of perspiration from his glistening scalp, "she's quite comfortably situated now. She is in the care of our matron, Mrs. Buckle, a most excellent woman."

"Thank Heaven for that!" breathed the Girl with the Wistful Eyes.

"We rescued her just in time. An hour more and we should have been too late, I fear. She was very despondent when we found her, and I'm afraid she was contemplating sui—"

The girl, as if dreading to hear his thoughts, ruthlessly interrupted:

"How did you know she was here?"

"One of the Chinamen—Lung Nom Quong—told us."

"By George!" said Tom, unfolding the piece of dirty paper. "I'll bet he's the one who gave me this. Is that the address of your mission, Doctor?"

The "doctor" held the bit of paper beneath the dancing gas flame and nodded affirmatively.

"Yes. He's not a bad sort—Lum Quong. He was trying to do the decent thing."

"Then why," asked Tom, sorely perplexed, "did he try to murder me?"

Reverend Webb looked up, surprised.

"He attacked you *after* giving you this paper?"

Tom narrated briefly his encounter at the foot of the stairs, and when he was done the little minister shook his head in a slow, bewildered fashion.

"They're a queer lot—Chinamen. Full of mystery and strange ways. Maybe he thought you intended to harm me, or perhaps he supposed—But who can fathom their minds? They're an eternal riddle to me—to every Caucasian."

"Well, at any rate, I'll take no chances with 'em after this. And now," said Tom, fanning his face with his hat, "it's hot as blazes here, and I, for one, move that we move."

The little minister's eyes dwelt ruefully on the shapeless bundle lying at his feet.

"I was on the point of departing," he said, "with [CONTINUED ON PAGE 18]

Like the jaws of a steel trap his sinewy fingers closed on the Chinaman's neck

Good-Health Talks

Suggested by Questions from Our Readers

By DAVID E. SPAHR, M. D.

A CITY with an epidemic of typhoid fever nowadays regards it as a disgrace. The farmer who has a case in his family, too often looks upon it simply as his misfortune. City sanitation protects people against the disease, but people who take vacations in the country, encampments of soldiers in the open country, etc., feel that they must have typhoid vaccine to safeguard themselves.

Typhoid fever is preventable. Polluted water or milk, flies or dirty hands which contaminate food, are the usual means by which the germ is carried into the body.

The disease is caused by a living germ taken into the intestines with food or drink. From them the multiplying germs find their way into the outside world to infect others.

The germs are spread chiefly by polluted water. Safeguard your water supply, and that of your church and school, and you are fairly safe against typhoid fever.

Adenoids

Will you please explain the location of the adenoids and how they affect the speech of a child? W. Z., New York.

ADENOIDS develop in the vault of the pharynx between the opening of the nose and the throat. They are soft, fleshy, fungous-like growths that obstruct the breathing and thus give a nasal tone to the voice. The treatment is removal.

Diseased Hair Follicles

The hair follicles at the nose and ears are ulcerated. What can I do?
Mrs. S. E. B., New Jersey.

APPLY an ointment of mercuric oxide yellow one per cent (kind for ophthalmic use) morning and evening.

Chronic Goiter

THE majority of goiter cases we see are chronic. In some cases the gland may attain a very large size without causing the patient anything more than a little discomfort, due to its weight and position. Sometimes a relatively small gland may, by pressure, bring about considerable disturbance. Very much depends upon the exact position it occupies. The first symptom to arise is likely to be that of distressing embarrassment of respiration. There is seldom any difficulty due to swallowing, as the esophagus readily adjusts itself to one side or the other to permit swallowing. Other symptoms are nervousness, palpitation, restlessness, weakness, and prostration.

In acute goiter the thyroid gland may, in a few days or even in a few hours, swell so as to produce severe symptoms of impeded respiration, prolonged inspiration, paroxysmal dyspnœa, and evidences of bronchial catarrh. In severe cases this sudden enlargement has been followed by death due to asphyxia, but if this does not happen the goiter may disappear.

There is no specific medical treatment which can be recommended for all cases. Each case should be studied and prescribed for by a competent physician. The wholesale treatment by the iodine method must be condemned as useless and positively dangerous. Many cases can be relieved only by surgical treatment, and the ablest available surgeon should be engaged.

Warts

MRS. W. L. K. of California vouches for the following as a cure for warts. Dissolve bluestone or vitriol in water. Apply to the warts three times daily, and they will soon disappear.

When You Eat Too Much

I am forty-six years old, and after eating my meals, I have an all-gone feeling. I have dizzy spells, and sometimes a tightness about my chest, usually just after meals. F. L. S., Massachusetts.

JUST a slight warning to you that you will have to slack up a little in your eating as well as in your work. Eat a little less quantity and masticate it more thoroughly. Take one-half hour rest after meals. Take a teaspoonful of phosphate soda in a glass of water after meals.

Ringing in the Ears

I suffer from ringing in my ears. The ringing doesn't affect my hearing, but it is annoying. Physicians tell me there is no cure, and the only relief is to have air forced into the ear through a small tube. Shall I use a nasal douche or spray? Please help me all you can.
N. A. R., Louisiana.

SPECIALISTS who are prepared to treat dry catarrh successfully maintain there is no cure for the disease. However, I have found that ten grains of sodium bicarbonate dissolved in an ounce of glycerin and a drop or two dropped in each ear and a few drops snuffed up the nose will start a little secretion and relieve the dryness and thus lessen the noises. Also, a solution of sixty grains of iodide of potassium dissolved in three ounces of syrup of trifolium and a teaspoonful after every meal will have a beneficial effect.

Announcement

Farm Implements Game Awards

THE judges have at last decided the fifty best titles for the fifty pictures in FARM AND FIRESIDE'S Farm Implements Puzzle Game, and the awards have been made.

A list of the ten persons who submitted the ten best sets of title suggestions, and are therefore entitled to the ten highest awards, is given below:

1. $1,000 cash, awarded to H. S. Cowles, Cleveland, Ohio.
2. $500 cash, awarded to Mrs. Jennie Lockhart, Yazoo City, Mississippi.
3. $250 cash, awarded to Mrs. Esther Lind, New York City.
4. $125 cash, awarded to Mrs. H. G. Fox, Pine Bluff, Arkansas.
5. $100 cash, awarded to Mrs. Philip Ward, Chardon, Ohio.
6. $75 cash, awarded to Emma Blanchard, Newark, New York.
7. $50 cash, awarded to F. C. Bixby, Millbridge, Maine.
8. $50 cash, awarded to J. R. Wyckoff, Franklin, Massachusetts.
9. $25 cash, awarded to Miss A. D. Kersey, Richmond, Virginia.
10. $25 cash, awarded to John M. Turner, Albany, New York.

A bulletin listing the names of all four hundred of the participants in the Game who are entitled to awards, also containing complete information as to the number of suggestions submitted by each, what the fifty best titles are, etc., has been mailed to all those who took part in the contest.

A copy of this bulletin will be sent to anyone else interested in the outcome of the contest, upon request, by addressing the Farm Implements Game Editor, FARM AND FIRESIDE, Springfield, Ohio.

ROYAL BAKING POWDER

Saves Eggs in Baking

You can make wholesome, appetizing cakes, muffins, doughnuts, etc., at a substantial saving in cost by omitting some of the eggs and adding a small additional quantity of Royal Baking Powder, about a teaspoon, in place of each egg omitted.

Thousands of women have written us of their success with this new method. One woman writes:

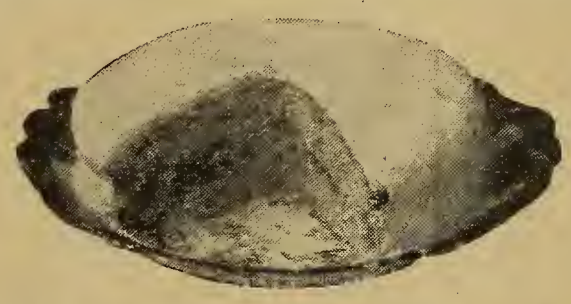
"My muffin recipe called for 2 eggs. I have discarded it since I found your eggless muffin recipe in a magazine. They are even better than the 2 egg ones."

You must use Royal Baking Powder, which is made from Cream of Tartar—derived from Grapes, to obtain the best results. Royal makes food of delicious quality and leaves no bitter taste, which is often apparent in food leavened with cheaper baking powders made from materials derived from mineral sources.

Try these egg saving recipes:

White Layer Cake

A snowy white confection, appropriate to serve with ice cream or a complete dessert in itself. An excellent party cake.



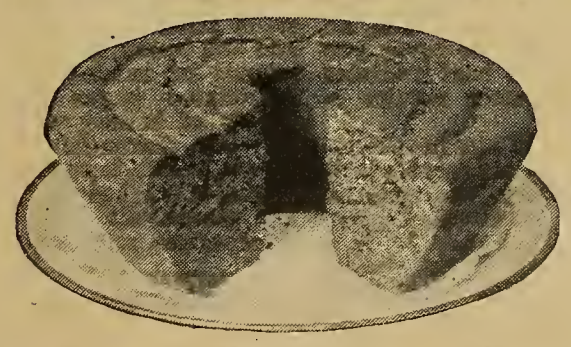
½ cup shortening
1 cup granulated sugar
⅔ cup water
2 cups flour
3 teaspoons Royal Baking Powder
whites of 2 eggs
½ teaspoon salt
1 teaspoon extract

DIRECTIONS:—Cream shortening and sugar together until very light; add water slowly almost drop by drop, and beat constantly; add flavoring, stir in the flour, salt, and baking powder which have been sifted together twice; fold in the whites of eggs which have been beaten until stiff and dry; pour into two greased layer cake tins and bake in moderate oven 20 to 25 minutes. Cover with white icing, which may also be used for filling.

(The old method called for whites of 3 eggs)

Potato Chocolate Cake

An unusually nourishing cake, exceptionally pleasing in flavor.



¾ cup shortening
2 cups sugar
½ cup chocolate
1 cup mashed potatoes
1 cup chopped nuts
2 eggs
¾ cup milk
2½ cups flour
5 teaspoons Royal Baking Powder
¼ teaspoon nutmeg
¼ teaspoon allspice
½ teaspoon cinnamon
½ teaspoon cloves
1 teaspoon vanilla

DIRECTIONS:—Cream shortening, add sugar, melted chocolate and mashed potatoes, mix well. Beat eggs separately and add yolks to the first mixture. Add milk and dry ingredients which have been sifted together. Beat well. Add nuts, vanilla and beaten whites of eggs. Mix thoroughly and bake in greased loaf tin in moderate oven one hour.

(The old method called for 4 eggs)

Equally satisfactory results in saving eggs may be obtained by using Dr. Price's Cream Baking Powder, also made from Cream of Tartar, and now manufactured by this Company.

These and many other good recipes, which economize in eggs and other expensive ingredients, appear in a new cook book which will be sent free on request.

Royal Baking Powder contains no alum nor phosphate

ROYAL BAKING POWDER CO.
124 William Street New York

Housewife's Club

The Summer Stove

By Eunice Haskins

DURING these blistering hot August days the blessing that the summer stove is to the overburdened cook on the farm cannot be measured. There is nothing to equal it for comfort, and summer stoves should be considered absolute necessities for farmers' wives.

Gas stoves are a possibility in cities, but in small towns and in the country, where there is no gas, the gasoline or oil stoves are very satisfactory. Investigation will prove that they do not "explode," as a few women still believe. The farm woman has become so familiar with the coal-oil lamp that she does not fear it. There is no more danger or difficulty in using oil for cooking than there is in using oil for lighting.

It shows intelligence and common sense to take advantage of all the labor-saving, the time-saving, and the comfort-producing methods at hand, and of the many offered none will exceed in the results gained the summer stove.

Since the oil stove requires frequent cleaning and trimming, many women prefer gasoline. Even a two-burner alcohol stove gives some relief during the hottest part of the summer. One of the best aids, of course, is the fireless cooker.

Eight years ago we bought our oil cookstove with three burners, paying $11 for it. We clean the stove two or three times a summer, clearing all the oil out of the pipes, removing all the small particles of dirt or soot that have collected, and wiping off all oil that may have collected anywhere in it.

The stove that I have had the best success with has a short drum—that is, one in which the blaze is near to the cooking utensil. Long burners are not advisable, because the food to be cooked is too far from the blaze.

A portable oven as large as a cookstove oven may be purchased for about $3, and after a little practice the housewife can use it for baking as well as the range oven. In choosing an oven it is best to get one to cover two burners, as thereby the heat radiates better and one gets better results in baking.

I often cook several things in our oil-stove oven at the same time, as beans, potatoes, tapioca pudding, and custard, and I find the oven excellent to keep food warm. It is also handy to heat the irons on the oil stove in the middle of summer when there is much laundry to be done.

Covered cooking utensils, especially for the oil stove, are now manufactured. I believe they are generally called triple pans. They come in various sizes in tin, aluminum, or granite, and are useful because they save oil.

Home-Made Beverages

By Carolyn C. Bigelow

FROM my home-made wines and cordials I have realized quite a sum. Earliest comes the making of dandelion wine. For this I pick chiefly the blossoms, though some of the stems may be left on if one cares to make it slightly bitter. For three quarts of flowers—and stems—have four quarts of water boiling and pour it over the blooms; let it stand overnight. In the morning strain off the liquid, and to it add three lemons sliced fine and one cupful of raisins cut open. Take three and one-half pounds of white sugar, dissolve it in a little of the liquid, let it boil until slightly thickened, then add it to the liquid and pour all into a covered jar. Stir thoroughly each day for twelve days, then strain again and bottle tight. This will keep indefinitely if sealed air-tight.

Rhubarb shrub comes next. If one uses only the pink ends a prettier colored liquid will result, but the whole stalk may be used. Cut it into small pieces, boil until soft, then strain. For each quart of liquid add the juice of one lemon, and sweeten to taste with sugar boiled to a fairly thick syrup. Heat to the boiling point, and seal air-tight. Dilute when used. A little of this syrup with charged soda water makes a most refreshing drink. This syrup makes a delicious sauce to serve with plain puddings.

Berries, such as strawberries, raspberries, currants, and blackberries, make fine cordials or wines, either alone or in combination. Raspberries and currants make an especially good combination. For blackberry wine mash the berries, and to every five quarts of them add one quart of boiling water. Stir frequently during twenty-four hours, then strain. For every gallon of the liquid allow three pounds of sugar. Dissolve sugar in some of the liquid and let it boil a little. I use white sugar, though some prefer brown. Put into bottles, jugs, or a cask, keep level full until fermentation ceases, then cork lightly; let stand for two or three months, then draw off into jars or bottles which can be made air-tight.

Lastly comes either grape wine or grape juice. For the juice add water to the fruit, boil until soft, strain, and to each two quarts of juice add one large cupful of sugar. Boil about five minutes; pour into bottles and seal.

Raisin wine can be made up during the winter. Use seedless, or remove the seeds from the usual sort, chop them, add one lemon, sliced fine, to every two pounds of raisins, and one pound of granulated sugar dissolved in eight quarts of boiling water. Pour into a jar, stir thoroughly daily for a week. Strain, bottle, keep in cool place for two weeks, when it is ready to use. Oranges and grapefruit make nice wines, also elderberries, and elder blossoms.

Irish Crochet Yoke

DIRECTIONS for making this unusually attractive Irish crochet yoke may be obtained by sending four cents in stamps to the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

In Place of Glass

By Mrs. C. R. Rowe

ONE safeguard for preserved fruits, pickles, and jellies, when putting them up in the makeshift crockery pressed into service this year, is to cover with colorless paper cut to fit top of vessel and dipped in pure alcohol. Be sure that it will just slip by a hair's-breadth into the receptacle and rest upon the contents. Then cover with the earthen top, paste thin muslin air-tight over all, then a thickness of paper, and when all is dry tie three thicknesses of tough thin paper tightly over all.

Retain Fresh Flavor

By Lillian Trott

TO PRESERVE small fruits without cooking, particularly raspberries, mash with sugar, pound for pound, using a wooden potato masher or beating with a spoon. When well blended, fill jars perfectly full and seal air-tight. They keep well and maintain the fresh-fruit flavor that is lost in cooking. In this form they may be served with sugar with the same gratifying results as newly picked berries. I put up many quarts of berries this way each year and they are very popular at my table.

War-Garden Recipes

By Edith C. Armbruster

GREEN ONIONS ON TOAST—Wash two bunches of new green onions and cut off part of the tops, leaving them about six inches long; cover with boiling water, let stand five minutes, and drain. Put into a saucepan, cover with cold water, and boil until tender. Drain again, and arrange the onions on pieces of toast; pour over them the following dressing: Blend together one tablespoonful of flour, one tablespoonful of butter, and one-half teaspoonful of salt; add one-fourth cupful of vinegar mixed with one-half cupful of water, and heat thoroughly.

This is a delicious as well as economical dish, as the greater part of the onion is utilized. It may also be served with a cream dressing.

CREAMED RADISHES—Many people who find uncooked radishes indigestible can readily eat them when prepared in the following manner. They are a delicious novelty to most housewives, and when there is a surplus of radishes on hand this will be found a most agreeable way of utilizing them: Scrape the radishes, and boil in salted water until tender. Drain and serve with a cream sauce made of one tablespoonful of butter, one tablespoonful of flour, one-half teaspoonful of salt, and two cupfuls of milk.

ASPARAGUS PATTIES—Make a rich pie crust, roll the dough out, and cut it into rounds with a biscuit cutter. Fit these circular pieces into patty or muffin pans and bake until a light brown. Wash two bunches of asparagus, cut into pieces about three fourths of an inch long, and boil in salted water until tender. As little water as possible should be used, so that when the asparagus is done only about one-half cupful of liquid should be left. Prepare a sauce as follows: One heaping tablespoonful each of butter and flour, one-half teaspoonful of salt, one saltspoonful of pepper, one cupful of milk, and one-half cupful of asparagus liquid. Boil until thick. Place each patty shell on an individual plate, and fill with asparagus. Pour over the white sauce and serve hot.

STRING BEANS BRETONNE—Prepare one quart of fresh string beans, and boil until tender in salted water. Cut two onions into dice, and place in a saucepan with a little butter. Let cook until of a golden color, and then add one teaspoonful of flour. Stir well, and moisten with one cupful of white broth; continue stirring until it comes to a boil; season with salt and pepper, then add the cooked beans, with a clove of garlic added, and cook slowly for ten minutes. Place on a hot dish, sprinkle over the top two tablespoonfuls of chopped parsley, and serve.

CREAMED YOUNG BEETS—Boil beets in unsalted water until tender. Rub off skins with a damp towel. Blend in a saucepan two tablespoonfuls of butter with two tablespoonfuls of flour, add one-half teaspoonful of salt and two little white peppers, and then, gradually, a pint of rich milk. Pour the hot sauce over the beets.

PARSLEY POTATOES—Wash and scrape a quart of small new potatoes. Boil in salted water until done. Drain, and pour over them two tablespoonfuls of melted butter, and shake until thoroughly coated with the butter. Chop two tablespoonfuls of parsley very fine, and sprinkle over the potatoes.

Canning Rhubarb

By Alice H. Winthrop

CHOP rhubarb stalks (in their skins) very fine, and pack solid, uncooked, in cans, seal as usual, and keep in dark, cool place. Of course, the jars must be sterilized, and the rhubarb washed and wiped before canning. As the juice oozes from the stalks it takes the place of water and excludes air spaces.

The Sealed Room

[CONTINUED FROM PAGE 16]

some of Miss Kirk's belongings. No slight task, as you perceive. This hat now," he added, stooping to pick the gay headpiece from the dusty floor, "afforded me no small difficulty. For the life of me I couldn't see how I'd carry it without crushing the thing. Then I solved the problem by wearing it, meanwhile pocketing my cap."

"I think it will further simplify matters," suggested the Girl with the Wistful Eyes, "if you'll let me carry the hat."

This was patently agreeable to him! and, having plucked a plaid cap from his pocket and slapped it on his polished poll, he reached down for the bundle. Tom offered to help him here, and so they descended.

No untoward incident marred their progress through the restaurant—Quong having returned to the kitchen, while Lo served chop suey to a bibulous patron—and presently they emerged to the street. Tom looked at his watch.

"Unless there is something more I can do," he said, a note of regret in his voice, "I suppose I may as well leave you here."

"No, no!" protested Rev. Webb. "Surely you will come with us to the mission?"

Tom looked at the girl as if to say: "Do *you* want me to come?"

She, however, said nothing; nor did she look at him. She was gazing off down the street, in that wistful way of hers, and apparently she had forgotten the existence of both the men.

The minister continued, looking eagerly at Tom:

"I am anxious to show you the great work we're doing. Do please come. Are you an out-of-town man?"

Tom nodded, watching the girl.

"Then you must come. It'll take but a moment, and you'll be well repaid, I'm sure."

Tom, who had already decided to go—with her rather than him,—murmured an acquiescence, and the three set off together.

THE little minister, trotting along between Tom and the girl, chatted glowingly of the work he was doing among the city's outcasts. It was undoubtedly a worthy work, and his account of it was interesting. But Tom could not deny that he gladly would exchange the whole of it for just one word from her, whose name he did not even know, at whom he kept casting sidelong looks of speculation, and who maintained a steady, even a forbidding, silence throughout the walk.

Their destination was a shabby building, originally a private residence, next a low-grade lodging house, and now at last a home for friendless girls and women.

"I admit," said the little minister apologetically, "its exterior is not very impressive; but we're doing the best we can with our limited resources, and inside"—he paused while removing a bunch of keys from his pocket—"inside," he continued, fitting one of the keys to the lock, "everything is neat and clean, at any rate, and all due to the excellent management of Mrs. Buckle—a noble woman, Mrs. Buckle, one of God's own true gentlewomen. One minute now, and you'll meet her, and then you can judge for yourselves."

But they were destined to meet her even sooner than that. The words had scarcely left his lips before the door was thrown violently open from within, and there stood before them a gray-haired, elderly woman, face white and eyes distended, and trembling from head to foot.

"Thank the good Lord you've come!" she gasped. "I was never so frightened in my life. A terrible thing has happened—"

She proceeded no further. Tom, who was standing beside the blue-eyed girl, afterward recalled that at this instant she emitted a sharp cry, the first voluntary sound she had uttered since leaving the Chinese restaurant, and it seemed as if some dread calamity, apprehended by her, had come true with a crash.

Another moment, and she was anxiously tugging at the arm of Mrs. Buckle and demanding breathlessly:

"Where is her room? Quick!"

And now all four of them were rushing pell-mell up the rickety stairs, heedless of the group of girls huddled in a panic in the lower hall.

"Last door to your right," panted Mrs. Buckle upon gaining the second-floor landing.

The girl, first in the upper corridor—she had led the others all the way—sped in the direction indicated and began thumping the door with her knuckles, while calling frantically:

"Dora! Dora! Let me in, dear. It's I, Winifred."

She paused, holding her breath as she listened, ear to the panel. There was no response. She tried the knob. The door was locked. Further alarmed by this discovery, she turned distractedly to Tom, who had hurried after her down the hall, with the minister pattering close behind.

"You must break the door down! Hurry! It's a case of life or death."

W

Tom, caught in the full swirl of the mysterious adventure, was past bothering about explanations. He threw his weight against the door—thrice, heavily, and at the third impact of his sturdy shoulder the door crashed in.

He staggered back, gasping for air; and he realized now, with a sense of horrible foreboding, that the room had not only been locked—*it had been sealed!*

[CONTINUED IN NEXT ISSUE]

The Bells that Brought Fairy Gold

By Abbie Farwell Brown

HIGH up on the mountain, Malket drove the four beautiful cows to pasture. Malket held his head low and looked sad. But the cows held their heads high and shook them gayly, so that the bell which each wore jingled making a harmonious sound. For these bells had been carefully chosen by Malket's grandfather, and, like most of the Swiss cowbells, were an heirloom of which the family was proud.

But Malket walked as if he no longer were proud of anything. The truth was that his family had fallen on ill luck. Interest on a debt which his father owed to Bernard, the landlord, was long overdue, and that hard man had threatened, if old Malket should not pay down the money before that very nightfall, to take away the little hut and the four beautiful cows.

Malket's mother sat in the little hut with her apron over her head, sobbing and rocking to and fro. Old Malket was away on the Alps with his gun, hoping to find chamois whose horns he could sell to the maker of souvenirs. Malket himself meant presently to go to the village and seek some tourist who might need a guide. But even if they should have the best of luck, they could not hope to earn what old Bernard required.

Malket left the cows in their pasture and turned hopelessly down the valley, stumbling, as he went, from the mist in his eyes. Malket was a little boy and his troubles were great. But the cows did not seem to care. They tossed their heads and the bells chimed sweetly over the flowery meadows.

THE sound of the bells, chosen so carefully by Malket's great-grandfather, came to the ears of a man and woman who were climbing up the opposite slope. They were wealthy foreign tourists. The woman's hands were full of the lovely flowers that made the Alp a garden. The man, leaning on his alpenstock, was gazing at the great snowy peak which cut the blue sky like a giant's tooth. And the cowbells chimed sweetly.

"Listen!" cried the woman. "They are the sweetest bells we ever heard!"

"So they are, indeed," agreed the man. "How I wish we had them!"

"The cows are just above us, and there's a hut below," said the woman. "Probably the owners live there. Let's see if you cannot buy the bells."

"No, thank you!" growled the man. "I've had enough of that. Haven't I tried everywhere to buy a chime like this. These peasants won't sell their old bells because they are such precious heirlooms. I shall not soon forget the last fellow I tackled. I offered him anything he might ask. But if I had wanted to buy his dirty baby he couldn't have been angrier. I tell you, Dot, I don't dare ask."

"It's our chance," pouted the woman, going nearer. "Oh, Will, we might *take* them."

"I'm no thief," frowned the man.

"I don't mean to steal them," protested his wife. "I mean to pay, of course, but to take them without asking. Then they can't refuse."

They went up on the slope, and there stood the four cows, gentle and mild, with nobody to guard them.

The man went up to each cow and unbuckled the strap which held her precious bell. The fourth strap he slipped free and ran it through the loop of an old leather wallet which he took from the pocket of his coat. In the wallet he had placed several pieces of gold.

"There, Dot," he said, tossing the bells into his wife's lap. "I feel rather like a robber. But I have paid for these bells more than the four cows are worth. The owners ought not to kick."

Nevertheless, they stuffed grass into the bells to keep them from tinkling, and stole guiltily back down the mountain to their hotel.

At dusk, old Malket and young Malket came wearily home. The father had nothing to show for the day's hunting. His son had earned a franc by selling edelweiss to tourists who did not climb.

"It is settled," said the old man, sinking hopelessly into his chair. "We are ruined. Call in the cows, Malket, for the last time. To-morrow they will be no longer ours—they nor anything else."

Sadly Malket went out to find the cows. He climbed the Alp behind the cottage, treading the flowers without seeing them. His eyes were full of tears. He listened for the sweet sound of the bells, which for the last time would tell him where his four friends had strayed. Hark! Was that the chime he knew so well? No, it was a far-off bell in the valley.

Malket went on and on, with hanging head, listening, but still he did not hear the bells. Suddenly there was a gentle "Moo!" close at hand, and looking up he spied the four cropping the grass lazily. They lifted their heads and looked at him, Malket thought, with a queer expression. How had he come so near without hearing the sweet tinkling of the cowbells?

Malket ran up to the leader, the great white cow who gazed at him with wide, kind eyes. "Why does not your bell ring, Eitel?" he asked, feeling under her neck for the strap. There was the buckle, but—Malket jumped as though a bee had stung him. There was no bell on the strap, but instead his hand touched something that chinked gently. It was a purse and he recognized the chink of gold.

Malket looked at Eitel with eyes nearly as big as hers. "The fairies have been here," he whispered at last. "They have taken our bells, the wicked little old people half out of their wits.

Eitel, being but a cow, could not tell.

IT DID not take Malket long to drive home the cows that night. I am afraid he hurried them more than they liked. When he reached the cottage he could not wait another minute. He leaped up the two steps and burst open the door with a loud shout that frightened the old people half out of their wits.

"Father, Father!" he cried, "the fairies have been with the cows! See what they have left on Eitel's neck. They took away our bells, but they left this."

He held out the wallet filled with yellow gold pieces. The eyes of his father and mother bulged with amazement.

"Malket," cried his father breathlessly, "count the money!"

Malket obeyed, and told them the astonishing result.

"A miracle!" exclaimed the old man. "It is enough not only to pay the interest but the whole debt to Bernard.'

They were silent with grateful amazement. Then old Malket seized his cap. "Let me go at once and throw it at the feet of our landlord!" he cried. "But I am sorry we have lost the bells—the bells of our fathers." And he shook his head sadly. His old wife shook her head too, and sighed.

And Malket sighed too. He knew he should miss the sweet sound of the bells very much indeed. But he said: "We would not have sold the bells for anything. But they are gone—and all is well. If the fairies wanted our bells so much, surely we should not grudge them. It is better to lose the bells than to lose everything."

Malket was a philosopher.

But the bells brought no luck to the foreigners. To their ears, though to no others, the bells jangled out of tune.

Schooltime Again!

Patterns to Please Both Maker and Wearer

OUR patterns are exclusive and sold direct from us to you. Order by mail, enclosing remittance in stamps. Address: Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

Above, a manly suit for the boy suitable for linen or serge. No. 3319—Boy's Suit with Right Side Closing. 2 to 8 year sizes. Price of pattern fourteen cents

No. 3318—Girl's Dress with Saddle Pockets. 4, 6, and 8 year sizes. Note how the effective use of stripes distinguishes this simple design. Pattern, fourteen cents

And for the smallest girl this quaint little dress. No. 3345—Child's Frock with Apron panel. 2, 4, and 6 year sizes. The price of this pattern is fourteen cents

The schoolgirl likes an easy-to-put-on dress. Make her No. 3351—One-Piece Dress with Side Closing. 6, 8, 10, and 12 year sizes. Pattern, fourteen cents

START now! Schooltime will be upon you before you know it, and the problem of the children's clothes. Wash suits and dresses are best for early fall. Linen, gingham, and cotton poplin are all suitable materials. The children will be proud to start the new term with a fresh outfit, and you'll find it no trouble at all to provide them if you let FARM AND FIRESIDE patterns help you with the making.

No. 3303 No. 3319 No. 3351 No. 3318 No. 3345 No. 3316
No. 3200

That ever-useful combination, a waist and skirt. No. 3303—Shirt Waist with Rolled Revers. 34 to 44 bust. Pattern, fourteen cents. No. 3200—Four-Piece Skirt. 24 to 34 waist. Width, two and one-half yards. Pattern, fourteen cents

A splendid everyday dress for the high-school girl or small woman. Suitable for linen, gingham, or any heavy cotton fabric. No. 3316—One-Piece Dress with Short Sleeves. 14 to 18 years. Width, three yards. Pattern, twenty cents

Copyright, 1917, by The Crowell Publishing Company

New Puzzles

The Elephant Express

"How far is it to Calcutta?" asked the wayfarer of an intelligent Hindu who was sunning himself at the door of his tent. "Your elephant knows but two gaits," replied the native. "So if my brother walks his beast at the rate of six miles an hour he will be an hour late for the boat, while if he trots at the rate of twelve miles an hour there will be an hour to spare for devotions and refreshments."

How far was the pilgrim from Calcutta?

Answers to Puzzles

Puzzles Printed Last Issue

Coming to Town

Aunt Cynthia tells me that they started out with $29, and that Reuben paid $8.50 for his suit and $6.50 for his hat. She gave $8.50 for a hat and $5.50 for a dress. Therefore, if Reuben had bought a $6 hat and she a $9 hat, hers would have cost half as much more than his, and they would each have spent $14.50.

An Arboreal Puzzle

Beech, weeping willow, apple, pine, elm, birch, palm, yew, pear, plum, poplar, evergreen, fir, ash, gum, chestnut.

INSTANT POSTUM
as coffee's successor on the family table makes for better health and more comfort.
Preferred by Thousands
"There's a Reason"

SILK HOSE FREE
Try our hosiery before selling it. We want you to become familiar with our hosiery line. A hosiery proposition that beats them all. Write quick for particulars if you mean business, and state size of hose worn.
Thomas Mfg. Co.
6546 Elk St. Dayton, O.

Delivered TO YOU FREE
Your choice of 44 styles, colors and sizes in the famous line of "RANGER" bicycles, shown in full color in the big new Free Catalog. We pay all the freight charges from Chicago to your town.
30 Days Free Trial allowed on the bicycle you select, actual riding test in your own town for a full month. Do not buy until you get our *great new trial offer* and low Factory-Direct-To-Rider terms and prices.
TIRES LAMPS, HORNS, pedals, single wheels and repair parts for all makes of bicycles at half usual prices. No one else can offer such values and such terms.
SEND NO MONEY but write today for the big new Catalog. It's free.
Rider Agents Wanted
MEAD CYCLE COMPANY Dept. B-83 Chicago

$1 A MONTH AND UP
WATCHES DIAMONDS AND HOLIDAY GIFTS
Prices Lower Than Cash Houses
An Old Customer Writes—"I have been trading with you nearly 15 years and know I can depend on what you say. You have made it easy for all to pay for the best at lowest prices."
Sent on Approval!
Let us send you Elgin's Newest Thin Model 17 Jewel Watch. This is the one Watch that has carried modern efficiency to a higher plane than any other Watch of the age. Its accuracy has given a value to seconds they never had before. At our
Sensationally Low Price
and Easy Terms, it has planted the flag of quality and economy upon watchdom's topmost pedestal. It is the one Watch that is mechanically correct. It is timed, adjusted and regulated for you at the great Elgin Factory. We make it possible for you and every one to own this superb Watch or any Watch you wish if you send your name and address now.
9091—$39.50 Tiffany Fine White—Genuine Diamond Ring, remarkable lustre. $50 value. 14k solid gold mounting. Special price for our Holiday Club only $39.50
Why Pay Cash?
We trust you and all honest wage earners. You assume no risk whatever. We make quick shipment on 30 days Approval. Comparison will convince you that we smash the terms, lower the price and boost the quality.
Free Catalog More than a half million people have said that our Catalog was the real guide for thrifty buyers. To get a copy of this New Book, before this edition is exhausted you should send us your name at once.
9091X—$49.50 Extra Fine Diamond La Valliere—new model—$60 value. Special Club Price $49.50
HARRIS-GOAR CO.
Dept. 201 KANSAS CITY, MO.
We Do As We Advertise.

U. S. DEPARTMENT OF AGRICULTURE
OFFICE OF SECRETARY

Farmers Haul Everything With It

Don't Use Horses for Hauling—Save 74% Cost Like This

THE modern farmer now realizes that horses for hauling are inefficient—expensive—time wasting. Thousands are today solving this tremendous problem with the wonderful Smith Form-a-Truck. With Smith Form-a-Truck to do all your hauling you have the services of every horse right in the field to do important, profitable plowing, seeding and harvesting—you have your horses every minute you need them.

Labor Shortage Solved

The greatest shortage in farm labor in history now faces the American farmer. Labor wages are now higher than ever before. Farmers now using Smith Form-a-Truck have overcome this danger by saving 4 or 5 hours every day.

Save Half Your Hauling Time

Do all of your hauling—haul your hogs, sheep, cattle and crops to market with Smith Form-a-Truck. Cover the same distance—and make just as many trips—in half the time with Smith Form-a-Truck.

Save Drivers' Wages

One driver with a Smith Form-a-Truck will do all the work of four teams and four drivers. You save the wages of 3 drivers—a clear saving for you of $8 to $10 a day.

Carry 2,000 pounds of milk to market and return in less than two hours, at a total cost of less than $1.50. Horses cannot compare with this low cost.

Wonderful Strength and Power

Smith Form-a-Truck combined with a Ford, Maxwell or Chevrolet gives you all the power you need for hauling ton loads through your fields, over the roughest roads, through sand and mud. Your repair expense year after year will be insignificant and your hauling cost the lowest in the world — less than 8c per ton mile.

Smith Form-a-Truck **$350** and a Ford, Chevrolet or Maxwell F. O. B. CHICAGO

Sell Your Horses

If you own tractors sell all your horses now—install Smith Form-a-Truck and do all the work horses are doing, at half the cost. Think of the saving in veterinary fees, medicines, bedding and feeding.

Get 8 Farm Bodies in One

No need now to have different farm bodies for different uses. The famous Smith Form-a-Truck 8-in-1 farm body gives you any type of 8 farm bodies you may want in an instant—by a simple pull of a lever. Not a single tool is required. Change instantly from a hog rack body to a hay rack body or a loose grain—to a high side flare board body—flat rack body—stock rack body—basket rack body—flat rack body, scoop board down—or grain body. The most wonderful convenience and money saving development yet offered farmers in body designs.

Unequalled Economy

In no other way—with no other hauling method—can you get such tremendous economy as with Smith Form-a-Truck. No other hauling unit has made such remarkable records on the farm in efficiency, in low cost and low maintenance. Daily use under every known hauling condition proves this conclusively. The farmer without Smith Form-a-Truck for hauling is wasting money daily.

Mail the Coupon Quick

Install Smith Form-a-Truck and speed up your farm work—get bigger crops—bigger profits. Mail the coupon without delay—start saving money today.

Smith Motor Truck Corporation

Manufacturers of Smith Form-a-Truck

Executive Offices and Salesroom:
Smith Form-a-Truck Bldg.
Michigan Ave. at 16th St.
CHICAGO

F & F 8 1817

Smith Motor Truck Corp.
Michigan Ave. at 16th St.
Chicago, Ill.

Gentlemen: Without obligation on my part, please send full details of Smith Form-a-Truck, the wonderful farm attachment with the new convertible body for farm use. I am interested in how the Smith Form-a-Truck can save me money and give me better service than I am now getting from horses.

Name.....

Town and County.....

State..... Number Acres Owned.....

WW

For Full Report of the Fremont Tractor Show See Pages 3, 5, and 7

LIBRARY
RECEIVED
AUG 29 1917
U. S. Department of Agriculture

FARM and FIRESIDE

The National Farm Paper - Twice a Month

ESTABLISHED 1877

5 cents a copy

Saturday, September 1, 1917

Eastern Edition

"It runs in the blood, doesn't it, Dad?"

Overland

TRADE MARK REG.

Model Eighty-five Four

$895

f. o. b. Toledo. Subject to change without notice

An Unmatched Success

Year after year for many years the thirty-five horsepower Overland has outsold, by a wide margin, all cars of such comfortable size.

An unequalled combination of power, comfort and economy, it has naturally been an unmatched success.

The thirty-five horsepower motor is not only unusually powerful—it is unusually economical.

The wheelbase is 112 inches—unusually long—permitting unusual roominess.

Thirty-five horsepower!—112 inch wheelbase!!—$895!!!

Also unusual at the price—cantilever rear springs that ease the car over rough spots—permit speed with comfort on poor roads.

No car of such comfortable size has ever approached its success, because none has ever combined such power, comfort and economy.

Catalog on request. Address Dept. 1095

Willys-Overland, Inc., Toledo, Ohio

Willys-Knight and Overland Motor Cars and Light Commercial Cars

FARM and FIRESIDE

Published Twice a Month by THE CROWELL PUBLISHING COMPANY, Springfield, Ohio

Copyright 1917 by The Crowell Publishing Company

Vol. 40 Springfield, Ohio, Saturday, September 1, 1917 No. 23

Tractors at Fremont

Points of Special Interest at This Year's Demonstration

By D. S. BURCH

THE small but powerful tractor is gaining in popular favor; designs have become more standard and sensible; the all-purpose tractor is the most eagerly sought after: these were the most striking conclusions I carried away from the National Tractor Demonstration held at Fremont, Nebraska, August 6th to 10th.

Early in the week, as I was standing at the headland of an 80-acre field that had just been plowed by tractors of various sizes, a pleasant-faced, bearded farmer asked to take my measuring stick to note the depth of the nearest furrow. Although along in years, he had an erect bearing, and I judged him to be the kind that used machinery to save himself work wherever possible.

And so it proved to be. As he returned my stick, he remarked that he was from Montana and had come to the demonstration to get another tractor. "I have a 30-60 machine now," he said, "but it is too big. It does good work and I will use it until it wears out. I am an extremist perhaps, but I have my eyes on one of these little 12-20 machines, which isn't as high as a man. What I need is a handy-sized tractor with lots of power."

Plenty of power plus ability to do a great variety of work, and all this without great weight or bulk—that seemed to be the requirement of nearly everyone who came to "look them over."

To satisfy this demand there were about a dozen tractors which I should say are well built. These have a three-point suspension to prevent twisting of the frame, plenty of clearance underneath, and a sensible gear ratio, enabling the user to do heavy work slowly and light work rapidly.

Success with Kerosene

MOST of these tractors burned kerosene after the motor was first warmed by running a short time on gasoline. Nor was there any opportunity for mistaking the tractors burning the two kinds of fuel. Each machine bore an official placard, stating the horsepower rating, the plowing speed, and the kind of fuel used.

The fuel tanks were filled publicly under official inspection, and then sealed. Success in burning kerosene in tractor motors has been accomplished in a variety of ways. One is chiefly by carburetor design. Another is by warming the manifold by means of the hot exhaust gas, and in still other cases a combination of methods, including special motor designs, have accomplished the desired results. On this subject of using kerosene I was especially anxious to get the experience of farmer users.

"When I bought my tractor, which is a 9-18 size," remarked a Michigan tractor owner, "the company said I could burn either kerosene or gasoline. This is the way I manage it: For the first round of the field I use gasoline, and then I switch over to kerosene. The only difference I can notice is that the gasoline gives a little more power, but the kerosense gives more in proportion to the cost. I can stop the motor and start it again on kerosene, if I don't allow it to cool too much."

One of the most difficult problems that tractor designers have had to face is that of preventing grit from being drawn into the motor. When a tractor works in dry soil, considerable dust rises around it, and if much grit is drawn into the air intake it will in time score the cylinders and cause the motor to lose power.

A heavy rain fell the first day of the Fremont demonstration, so there was little dust and consequently no occasion to demonstrate the anti-dust devices. But the majority of the tractors now either have or can be equipped with air filters, which remove all of the heavy, gritty particles and most of the fine dust. As a further precaution, several tractors had their intake pipes extending ten feet into the air, giving the appearance of a periscope. At that height there is practicaly no dust gritty enough to be harmful.

Another feature of the demonstration was the scarcity of "freak" machines and those built to sell at a low price. While there were a few of each, no special mechanical experience was needed to pick them out. As one farmer remarked, as we were watching a certain machine: "Some tractors are really designed and others look as if they were just put together, hit or miss, in some crossroads blacksmith shop. I've found by experience," he added, "that if a piece of machinery doesn't look right it seldom is right." And even though the tractor is built for utility and not for appearance, it is reasonable to conclude that if it is not protected from the dust, or if it is flimsy or noisy, or vibrates badly under a heavy load, that tractor will not be very durable.

The "Broadway" between the tents. There was only one topic of conversation—tractors of course

The least expensive tractor on the grounds was one selling for slightly less than $400. Its power was equal to that of a four-horse team, but the demonstrators in charge of this machine were conservative about its merits. "This tractor will do light work and it is a good buy for a small farm," one of the experts said, "but we know from experience that as soon as some people find it will pull one plow nicely they will begin to figure on pulling two or even three plows. This little fellow here," he continued, pointing down to it, for it was not waist-high, "has a powerful high-speed motor, but the result of overloading is excessive wear and a short life. The user must remember that a tractor under its rated loading is working about as hard as an automobile traveling at 40 miles an hour. It never pays to overload, but people simply will not believe us when we say that the next size larger will be best for them." Yet there is a place on small farms for an inexpensive tractor like this one, both for belt work and in the field.

Compared with previous years, the average person attending the demonstration had a much better knowledge of motor-driven machinery.

Most of this knowledge was no doubt the result of automobile experience, as a large proportion of the visitors came in their own cars. There were also many foreign buyers on the grounds. I talked with one from Russia, another from England, one from Cuba, and several from Canada. Some of these men placed liberal orders, and one in particular, for 8,000 tractors, caused considerable comment. "But for our part," remarked an official of one of the most prominent concerns, "we would rather sell one tractor here in America than two abroad. We have filled some moderate-sized foreign orders, but our general policy is American-made tractors for American farmers. Foreign demand is now great because of the war, but we are willing to sacrifice war profits in order to make farmers here in America think well of our company and of our product, both now and after the war." But in spite of this feeling, which is also shared to some extent by other tractor companies, important war orders, combined with scarcity of materials, have already delayed deliveries of farm tractors and are likely to do so still more.

I have in mind a concern which has contracted with our own War Department for tractors to be used for hauling artillery. Another manufacturer is oversold for two years ahead on his largest sizes, which will be used for "tanks." Coupled with this condition is the fact that most of the farmers who attended the Fremont demonstration did not leave their harvest and their corn-cultivating from idle curiosity. Most of them were there to buy if they could find what they wanted.

Modern tractors of improved design turn in about as short a space as a team of horses

Best to Buy in the Fall

WITHIN the next ninety days, I judge that orders for fully 100,000 tractors will be placed by farmers who have come to the conclusion that mechanical power is better and cheaper than horseflesh for heavy farm work. Here is a little incident which some may regard as trivial, but I hope those seriously interested in tractors will appreciate its true significance. At the demonstration I met two young men who were brothers. They already had a tractor which they own in common and which they bought last fall. First they went to their state short course, where one of them studied farm mechanics and the other took a course in crops and soils. Then they both went to last year's tractor demonstration, picked out a machine that suited them, and placed their order immediately. A month later it was delivered, and they used it for fall plowing, also for belt work during the winter. By spring they knew their machine perfectly and were able to rush their crops into well-prepared seed beds. "The year before we paid $850 for the extra help and horse labor we needed on our 240-acre farm," one of the brothers told me, "but in the year since we have had the tractor we have cut that cost to $300—the wages of just one man. The total cost of running the tractor for the year was between $250 and $300, including fuel, oil, and all [CONTINUED ON PAGE 17]

Sorghum-Making in Missouri

Veteran Grower Tells Secret of Clear Color and Fine Flavor

By W. L. NELSON

SORGHUM is a most satisfactory substitute for high-priced sugar. With a greatly increased acreage of cane, the prospects are that the sorghum production this year will be unusually heavy. Many extensive growers planted larger crops, and thousands of farmers who have not heretofore grown sorghum put in small patches, perhaps a few acres. Then, too, many veteran growers who had ceased to grow the crop, owing to the competition of corn syrups and other substitutes, are this year back in the business, many of them on a larger scale than ever before.

Good sorghum is a healthful and palatable product such as can be enjoyed by every member of the family, while poor sorghum is an abomination. In few other products does quality make such a difference as in sorghum. The principal reason why a great many people do not care for the cooked juice of the cane is that they have never tasted first-class sorghum. Sour or dirty sorghum, such as one often sees, has nothing to recommend it. A properly made product, though, should, in this year of conservation in food, find favor with practically every family.

In the making of sorghum, care and cleanliness are among the first considerations. The evaporator, pans, and everything else used in connection with sorghum-making should be screened so as to keep out flies, bugs, and dirt. Candor compels the statement that much of the old-time sorghum of which we hear was not made under the most sanitary conditions.

Modern facilities, however, have greatly improved the surroundings of the average sorghum camp. One difference that we notice is that much of the product is now put in bright, clean tin buckets of uniform size, generally one-gallon measure. However, owing to the advanced prices in tin, the tendency on the part of farmers this year will be to go back to the old-time barrel or keg. Where used barrels are filled, be sure to see that they are thoroughly cleansed and dried out in advance. Also, that the hoops are driven on tightly. When a damp barrel is filled with sorghum it is likely to leak.

One of the most successful sorghum makers here in Missouri is William H. Coates, who began sorghum making in 1881. Mr. Coates is not only a practical grower of cane and maker of sorghum, but he has also made a thorough study of the business, investigating the best plants in a number of states. While growing some cane himself, he has principally conducted a custom business, grinding for other growers.

In making sorghum, one of three plans is generally followed. The farmer may have a few acres of cane, own a small mill, and make his own sorghum, with a limited surplus to sell. Then there are custom mills, such as Mr. Coates is now operating, which handle all the cane in an entire community. Where this is done, sorghum is made on a share basis, formerly one half, but now somewhat less, or at so much a gallon. The charge for making has advanced from 15 cents to 30 or even 35 cents a gallon, just as the price has gone from 35 cents to about 75 cents a gallon.

Soils Best Suited for Cane

THE third plan is where an individual or company owns a large mill, evaporator, and full equipment, and buys all the cane grown in the community. Where this plan is followed cane is bought at so much an acre in the field or at a stated price per ton, delivered at the mill. In either event, the quality of the cane is a consideration.

The best cane for making sorghum is grown on clay soil, yellow or white loam, or sandy bottom soil. A soil that is very rich in humus is not to be desired. Cane will ordinarily make from 6 to 12 tons an acre, and should yield from 10 to 16 gallons a ton. The best yield that Mr. Coates has ever had was 200 gallons an acre on sandy creek bottom land. However, he reports one grower who, in 1888, on an island in the Missouri River, grew cane which yielded 300 gallons an acre.

It is the general belief among experienced makers of sorghum that the cane should be worked up when the seed is "in the dough." At that time the sap does not go to sugar so easily, and just as much syrup is secured.

One of the most common mistakes made in the handling of cane is a lack of care in cutting and hauling. In stripping cane the workers should be careful not to bruise or break the stalks. Wherever the stalk is bruised or broken it is apt to "bleed," and the sap will sour from one joint or node to the other. Just a little of such damaged cane can ruin a large quantity of syrup that would, under proper treatment, have been good. Cutting should always be done with a sharp, heavy knife, so that all the stalks growing in a hill are cut clean at one stroke. A dull knife or one too light bruises the stalks because of the many strokes made. When once the cane is cut, it should be placed in bundles and bound near both ends. To make one tie in the middle is not sufficient. When the cane is hauled to the mill the bundles should be laid carefully on the wagon. And when the mill is reached unload without bruising and set up the bundles straight on the butt ends. If the cane is to stand any length of time it is best to stack it and to cover well to prevent injury from sun, wind, or possible freezing.

A simple sorghum mill for handling the product of a few acres planted to cane

All this is in direct contrast with the manner in which much cane is handled. All of us have seen cane hauled to the mill, dumped off as if it were a load of straw, and perhaps driven over or tramped on. Where this careless method is followed we may also expect to see juice left in the tubs overnight and the day's run made without first cleaning the vessels and tools.

The careful sorghum maker makes liberal use of lime, both as a purifier and also as a corrector of acidity in the sap. Mr. Coates advocates slaking one-half bushel of lime and adding 10 gallons of boiling water. This water is then poured off after the mixture has been thoroughly stirred and settled. The same amount of water is again added to the lime. This is then drawn off and the lime water placed in an air-tight receptacle.

Each morning, noon, and night he puts enough of this solution in the mill to wash it out thoroughly. This keeps the mill sweet and clean. Filter, barrels, pipes, and, in fact, everything in which the juice comes in contact is cleansed in the same manner. It is essential that this precaution be taken, for almost immediately after the juice is pressed from the stalks it begins to ferment. Sour juice is one cause of poor sorghum. At his mill Mr. Coates keeps a quantity of litmus paper with which to test the juice for acidity. This acidity is corrected by the use of the lime solution, lime water being added until blue litmus paper placed in the run retains its original color.

All juice is thoroughly filtered. The filter consists of a large barrel, half filled with rye straw, then covered and weighted down. Foreign substances are caught in this filter, which should be thoroughly cleaned each evening and the straw renewed every morning. Rye straw is also placed in the covered filter trough, which is 20 feet long, with three partitions equal distances apart. This trough is filled with rye straw, which is weighted down. Some of the lime water is placed in the upper division of the trough through which all the juice starts on its round.

An old-fashioned evaporator. Quality depends largely on handling the juice rapidly

When the juice reaches the evaporator and comes in contact with the heat, all the scum is removed through means of a double flannel blanket. Once in the evaporator the sorghum should be "cooked off" as rapidly as possible. Mr. Coates holds that it should be finished within thirty minutes. This, of course, means a hot fire, and also that the syrup should not stand more than one inch deep on the floor of the evaporator. Sorghum so cooked will have a brighter, clearer color and better taste than when allowed to simmer along or when cooked over a longer period.

The evaporator used by Mr. Coates is an invention of his own. It measures 22 feet in length and 5 feet 6 inches in width. It is really two separate sheet-iron compartments riveted together in the center. The raw juice or sap enters a small apartment at the far or cooler end of the right side of the evaporator, and is then conveyed forward through the entire length of the pan.

It then passes over into the left section, where loose bars placed crosswise add to the agitation of the mass and constitute a self-skimming process. To the left of this section is a small overflow compartment. From here the sap works toward the finishing pan, where eventually it is drawn off through a faucet placed one inch above the bottom, and after it has been strained through a double flannel cloth. In drawing off the sap care should be taken that no foam is included. In the Coates evaporator the foam fit for reworking is dipped back and again started on its round, while the residue passes automatically into the discard, from which it is piped out as waste.

Speed, Mr. Coates holds, is a prime requisite in the making of good sorghum. He contends that it should not only be cooked rapidly, but that it should be cooled in the same manner. The cooling apparatus consists of eight troughs, each nine feet in length.

The hot syrup is poured into the larger end of the first trough and gradually works its way until finally, when it has passed out of the lower section, it is practically cool.

Uniform Cooking Improves Quality

MR. COATES'S method for preventing sugaring is to add one gill of glucose to each run of cane where there is a tendency for the sap to go to sugar. This tendency is greatest in overripe cane. There is also quite a difference in the varieties. "Half a teaspoonful of lard put in the evaporator will keep the syrup from sticking or scorching," says Mr. Coates, and in so saying he added that this was a practice not generally known.

Asked if he had ever had any experience in handling frozen cane, Mr. Coates said that he had. He stated that frozen cane, if properly handled, will make just as good sorghum as if it had never been frozen. However, in order that this result be obtained the cane must be cut and stacked under shelter while the frost is still in it. If the sun is allowed to strike it and if it thaws out rapidly, it will sour or spoil in a short time, just as will frosted fruit.

A frequent mistake of sorghum makers, according to Mr. Coates, is to put half-cooked juice into a quantity of sorghum that is ready to take off. The cooking must be uniform. In other words, every particle must be cooked. A little half-cooked product will cause the entire mass to sour. "Smoking the pipe" is an old-time expression among sorghum makers, and describes a condition which indicates that the cooking has been completed. At this time the steaming mass is the same color all over, and the little bubbles that burst contain very little moisture.

The amount of equiment required in sorghum-making will depend much upon the methods, the crop, and the man. A small quantity of good sorghum may be made up with an inexpensive mill and such kettles and other vessels as are to be found about the ordinary farm home. However, this plan is not generally to be recommended. It is better that the mill be larger and the equipment more complete.

If a custom mill is available, and if the product can be handled through a commercial evaporator, this plan is better. Community or neighborhood owned outfits are also to be recommended.

EW

Tractor Operating Costs

A Basis for Judging Where Mechanical Power Will Pay

By B. D. STOCKWELL

In the hands of a proficient operator the tractor is a very reliable source of power

"IS THE modern tractor really the farmer's friend or is it a rich man's toy? Is it as dependable as horses or mules? What will it cost me to operate one, and how long will it last?" These are questions which I have been asked many times, and they no doubt express the state of mind of the majority of thinking farmers.

The only safe answers must come from general experience. And when we add to that our own personal observations we are likely to be very close to the correct solution. The first gas tractor I had the opportunity to get figures on was the property of a wealthy city man, but it was operated by his farm manager. This tractor was a powerful machine that pulled six plows through most any kind of soil in any condition, and it cost around $2,000 three years ago.

"We first tried a little tractor that pulled only one plow," the manager told me, "and every time there was any real hard pulling or the plow struck a rock the tractor sat up and looked at the moon. You can see what's left of that tractor over in the fence corner." He went on to explain that the machine was too light, and admitted they had made a mistake in getting it. By "they" he meant the farm owner and himself. The manufacturer of the tractor had been new in the business at that time and did not realize the strain and hard usage a farm tractor would have to endure. Moreover, it was a cheap tractor, costing less than $450, since they did not want to invest much; in brief, it was just a small experiment with them.

Experience of 200 Owners

"BUT even that first tractor, though impractical for our use," he added, "served its purpose. It gave us an idea of what a better one would do, and the one we have now is all right. I don't see how we could farm without it."

After that I talked with the owner of the farm, who said that he had figured that the cost of plowing sod ground with the tractor was about 60 cents an acre. But that figure included only the gasoline, oil, and the wages of the operator. It did not include depreciation, repairs, interest on investment, or the cost of hauling the fuel and oil to the fields where it was working. When everything was figured in, the total cost was a trifle over a dollar for every acre plowed.

This incident is typical of the average owner of a new tractor or of a new automobile. Pride of ownership does not seem to be enough. He is not satisfied with getting good service from his machine at a fair cost, but endeavors, unconsciously no doubt through enthusiasm, to prove he has discovered the way to get something for nothing. Good care and skillful handling help of course in keeping down costs and getting the best results, but an average figure is the best general guide for the prospective tractor owner to go by in estimating the probable cost of upkeep.

The most dependable figures I know of are those collected by the Office of Farm Management of the U. S. Department of Agriculture, and are based on the experience of over 200 tractor owners on corn-belt farms. Here are the most interesting statements:

A tractor displaces on an average about one fourth of the horses on the farm where it is used.

Two and one-half gallons of gasoline and one fifth of a gallon of lubricating oil are ordinarily required in actual practice to plow one acre of ground seven inches deep. The size of the tractor has little influence on these quantities.

Concerning the size of tractor, owners in Illinois made the following recommendations:

For farms of 200 crop acres or less, the three-plow tractor.

For farms of from 201 to 450 crop acres, the four-plow tractor, with the three-plow outfit as second choice.

A farm of 140 acres is the smallest upon which the smallest tractor in common use, the two-plow outfit, may be expected to prove profitable.

Medium-priced tractors appear to have proved a profitable investment in a higher percentage of cases than any others.

The life of tractors, as estimated by their owners, varies from six seasons for the two-plow to ten and one-half seasons for the six-plow outfits.

Plows drawn by tractors do somewhat better work, on the whole, than horse-drawn plows. In Illinois the depth plowed by tractors averages about one and one-half inches greater than where horses are used.

With a proficient operator the tractor is a very reliable source of power.

The chief advantages of a tractor in the opinion of several hundred Illinois farmers were: (1) the ability to do the heavy work and do it quickly; (2) the saving of man labor and doing away with hired help; (3) the ability to plow to a good depth, especially in hot weather.

The chief disadvantages were: (1) packing of the ground when damp; (2) expense; (3) delays and inability to use the tractor for many kinds of work for which horses could be used.

Seventy-five per cent of tractor owners in Illinois state that the tractor has been a profitable investment for them.

Experience in the matter of repairs is unusually interesting. More than half of the tractor owners in Illinois reported they spent nothing for repairs during the first season, and the others had repair bills ranging from a few cents to a hundred dollars or more. On an average the repair bill for the first year is about one and one-half per cent of the cost of the tractor, and the second year it is about three per cent. After that it is about four per cent a year. By the time the tractor is worn out—the average life is about eight years—the total repairs will amount to somewhat less than one third the original cost of the tractor. In the case of a machine costing $800 this would mean that the repair bills for eight years would be about $250. Ninety per cent of the tractors investigated in Illinois were operated by the owner or some member of his family, and of 200 tractors, 57 per cent were not out of commission a single day during the season. The other tractors were laid up for an average of seven days for one reason or another. Inexperience was the principal cause of most of the trouble. The most important requirement for running a tractor economically is the ability to detect trouble before it becomes serious enough to cause a delay.

The Majority Have Few Delays

I HAVE in mind a tractor owner who noticed his motor was becoming rather hot and stopped it to determine the cause. He attempted to turn a pet cock to test his oil supply, but it refused to turn. He seized a wrench to force it, gave it a yank, and twisted the handle of the pet cock entirely off. "Now see what I've done; I've busted it!" he cried in a rage, and added an oath to relieve his feelings. An examination of a similar pet cock showed that it was not made to turn in the direction he tried to force it, but turned easily in the opposite direction. "Well, I've got to get this plowing done," he added, looking at the tractor defiantly. So he started it again and continued with his work without locating the cause for overheating that he had stopped to find.

That is of course an extreme example and may help to explain why some tractor owners are frequently obliged to call in an expert repair man.

But, on an average, let us remember that according to government figures 57 per cent of tractor owners were able to go through a season without having the tractor out of commission a single day; 52 per cent did not spend a cent during the season for repairs; and 75 per cent considered their tractors profitable.

The ability to do heavy work quickly was the principal benefit mentioned

These average figures indicate that a majority of farmers have been able to handle it without difficulty and make it pay. And what a majority can do is within reach of the individual who uses good judgment and common sense.

The use of a tractor, we must remember, is not simply a mechanical matter. I have in mind a farmer who has half a section under cultivation, and who thought at first he would get better results by employing an experienced man to drive his tractor. The first day he instructed the expert to hitch the tractor to a double-disk harrow and work a certain field. The owner then went to town. On his return he found that the tractor expert had been over the field but had not set the levers of the disk so it would work the soil. The blades of the disk simply rolled over the ground.

He then tried one man after another, paying them all good wages. They had no trouble in keeping the tractor operating nicely, but their idea of their job was simply to sit on the seat and keep the outfit going. They were mechanical experts, and that was all. Since then he has operated the tractor himself with no difficulty whatever. And by understanding the implements pulled by the tractor as well as the machine itself, his results have been gratifying both in quantity and quality.

Special equipment and hitches are not needed as a rule. In this case a chain connects the tractor with the drawbar pin of the ordinary horse evener

Answering the Nation's Call

IN this "supreme test" of the nation, private interests must be subordinated to the Government's need. This is as true of the telephone as of all other instrumentalities of service.

The draft for war service which has been made upon the Bell System is summarized in a recent Government report.

Government messages are given precedence over commercial messages by means of 12,000 specially drilled long distance operators all over the country.

The long distance telephone facilities out of Washington have been more than doubled.

Special connections have been established between all military headquarters, army posts, naval stations and mobilization camps throughout the United States.

More than 10,000 miles of special systems of communication have been installed for the exclusive use of Government departments.

Active assistance has been given the Government by the Bell System in providing telephone communications at approximately one hundred lighthouses and two hundred coast guard stations.

Communication has been provided for the National Guard at railroad points, bridges and water supply systems.

A comprehensive system of war communication will be ready at the call of the Chief Signal Officer, and extensive plans for co-operation with the Navy have been put into effect with brilliant success.

As the war continues, the demands of the Government will increase. And the public can help us to meet the extraordinary conditions by putting restraint on all unnecessary and extravagant use of the telephone.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

The Editor's Letter

A Message to You from the Army of Mercy

Copyright by Underwood & Underwood, N. Y.

The door of the American Red Cross headquarters is always open to both givers and receivers in times of national calamity

THIS is the story of a business—a business which handles millions of dollars, which reaches millions of people, which is conducted by some of the greatest financial brains of the world, and yet a business which has as its foundation and working guide the principles laid down nearly nineteen hundred years ago by the Great Teacher of Galilee.

This business, which deals in dollars and men and raw materials just like any other business, and yet which follows in all of its operations the simple rule, "Serve ye one another," is the American Red Cross.

A few days ago I went down to Washington in response to a hurried call by wire from the Red Cross headquarters. "We need the help of the readers of FARM AND FIRESIDE," they said, and I answered them strong in the assurance that if you in the FARM AND FIRESIDE family were really needed you would respond immediately and generously.

The beautiful white new building in which the Red Cross executives work has been completed just in time to meet the enormous demands which the advent of America into the war has placed upon the organization. As I walked up the steps of that serene entrance, I glanced down the sunshiny street with its fine buildings and trim bright grass, and there came to me a momentary vision of the price paid daily for this peace on the other side of the world.

Over there the Red Cross banner is flying over an old dwelling house, perhaps, hastily remodeled into a hospital. Inside are overworked surgeons in their white uniforms, nurses going quietly to and fro, everywhere the sounds of pain, the smell of disinfectants and ether.

In another country the same banner flies over a long gray relief station in a village choked with fugitives from the war-stricken provinces. And in a long line before a tiny window peasant women stand for hours waiting for medicine or for the few ounces of black bread their food ticket calls for.

At the front, daring drivers guide their motor ambulances over shell-wrecked roads to rescue *un blessé* who, like as not, has been lying in agony for hours, then back again, unmindful of the glare and scream of enemy shells bursting around, thinking only of the goal, the *poste du secours* with the Red Cross flying over it, where the surgeons will take in charge the poor fellow moaning inside the ambulance.

THERE was nothing in the busy headquarters to give a sign of the tragic importance of the work these men and women at telephones and typewriters were directing. It was only when I had talked to many of them individually and heard their stories of what they were doing and of how much more they could do if you would help them, that I realized the immensity of their task.

Imagine a man who was contentedly cultivating a nice little 160-acre farm and then was suddenly bidden to manage and plan for all the farms in Texas. That is something like what has happened to the Red Cross since war was declared by the United States.

This is what a man high in the organization said to me—a great New York banker who has practically deserted his business to give his time and talent to determining how the resources of the society can be spent so that the most good can be gained from them:

"Two years ago, in 1915, there were 25,000 members in the Red Cross, and the resources were comparatively small. To-day there are 3,000,000 members, and the cash capital of this vast organization is $100,000,000. Within two more years we expect the membership to increase to 10,000,000 and the money we receive will be tripled.

"If you can imagine a piece of work bigger than that of an express company, a telegraph company, or a telephone company which grew to ten times its original size in the space of three months, you will know the kind of a job that is facing the Red Cross. Up until March of this year the Red Cross had 40 workers in the new headquarters at Washington; now there are 730. Mail streams into the offices every day from all over the world, and none of the letters can be dismissed with a brief note. They all require pages of thoughtful advice in response. The demands from the front are increasing daily, and they must be met somehow."

The other day I heard a woman querulously criticizing the methods of the Red Cross, and I couldn't help saying to her:

"Give them a chance. We still find things to criticize about the railroads, the express companies, and the telegraph lines, and they have had *seventy-five years* in which to perfect their methods. The new, big Red Cross has had three months."

IN SPITE of the importance of its work and the huge sums of money at its disposal, the business genius which directs the organization is not paid for. Seventy-five per cent of the talent contributed is without pay. The men at the top, who are putting into it the priceless wisdom and experience they have gleaned through years of labor in the great enterprises of the country, are offering their services free; in many instances they are paying their own expenses. They are men who under no circumstances and for no price could be hired, so they were asked to work without hire, and they are doing it gratefully as a privilege.

A glance back at the Civil War will tell what it means in minimizing the poverty and suffering which are bound to come in the wake of war to have an efficient organization whose sole purpose is to conserve health and save life. There were no general hospitals at the beginning of the Civil War—only tent hospitals in which the wounded could be cared for. Camps were dirty, food was badly chosen and cooked, clothing was insufficient, much of the nursing was simply the well-meant but in many cases the crude efforts of volunteers. Money for relief work came in slowly because there was no great national organization for collecting it and guaranteeing its proper disbursement.

Women all over the United States formed societies and made bandages and comforts of various kinds for the soldiers, but their work, too, lacked the direction and uniformity which are necessary for prompt and effective assistance. In the Civil War, country women were especially generous in contributing time and labor to the cause of helping the sick and wounded. In many instances the men were not given enough green food, and farmers contributed potatoes and fresh vegetables in large quantities, which frequently saved a camp from scurvy and other diseases. Many of the women readers of FARM AND FIRESIDE must remember those days. Perhaps some of you remember that as school children you were required to lay aside your school tasks every afternoon and pick lint, for that was before the days of absorbent cotton.

Then the formation of a volunteer organization, called the Sanitary Commission of the United States, alleviated these conditions to some degree, and later the formation of the Red Cross in America, led by Clara Barton, laid the basis for the [CONTINUED ON PAGE 19]

E

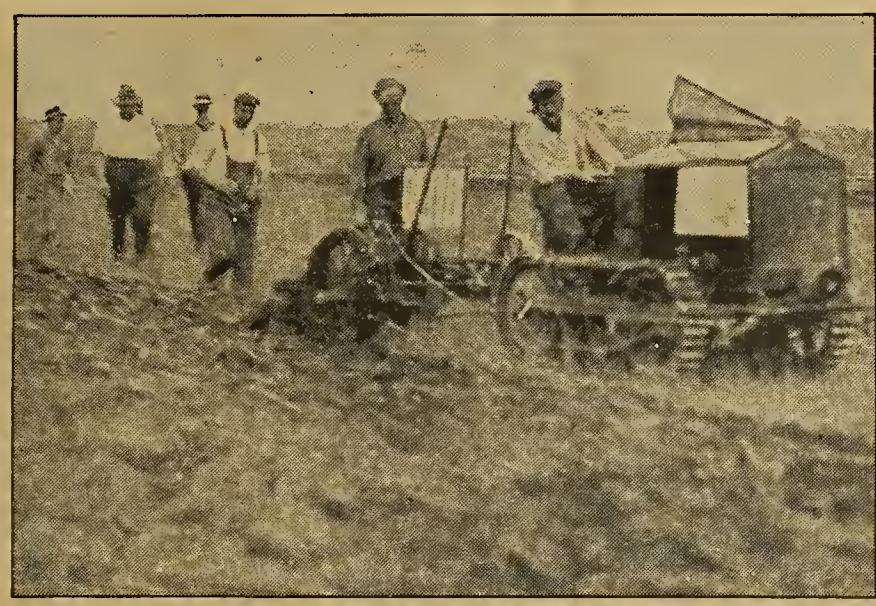
Tractor Show in Pictures

Farm and Fireside's Camera Brings Demonstration to Your Home

Portion of the "Tractor City," as it was called at Fremont. Note the tractor hitched to a binder. It was more than a plowing demonstration

This is a rear view of the exhibition grounds, showing several tractors being taken out to the fields. Demonstrations were continuous

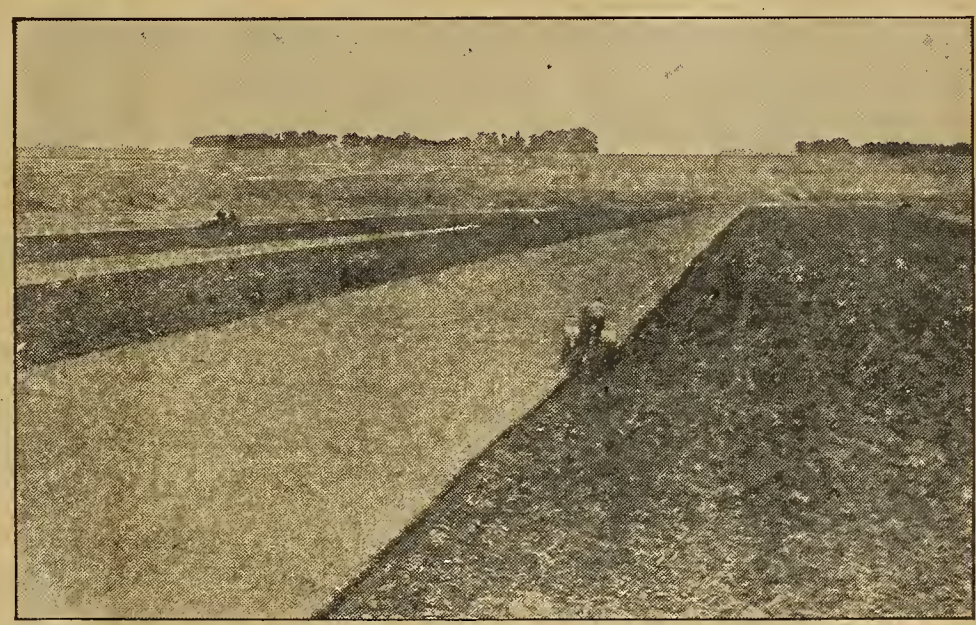
Each machine was required to carry an official placard stating the fuel used



When this picture was taken, the tractor was traveling at a good rate of speed. The machines were too busy to stop and "look pleasant"

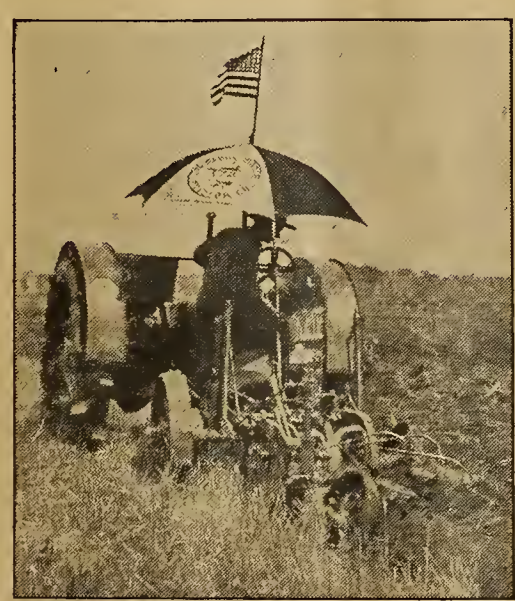
Here is a typical group of men discussing the merits of a popular tractor

One of the desirable points for a tractor that is to be used for plowing is the self-steering feature. It enables the operator to watch his plows work

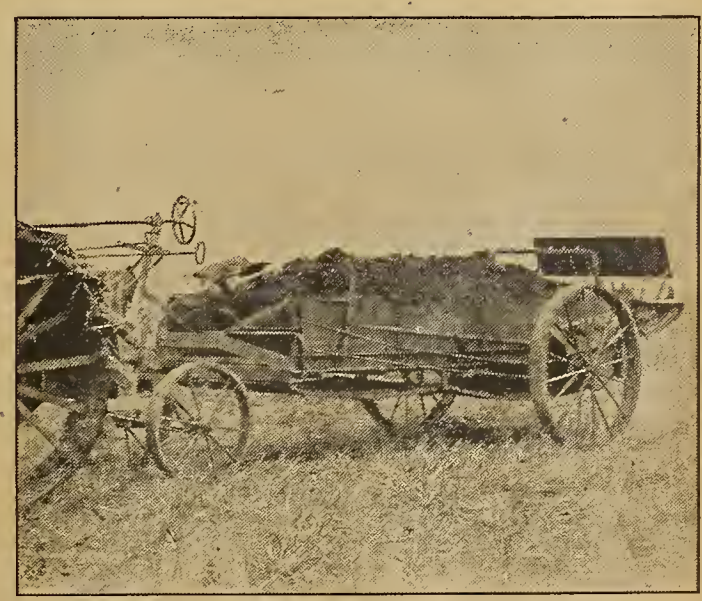


This picture was taken from the top of an oat stack. The little specks are tractors. The soil in this field was a tough gumbo, made sticky by rain

Men on horseback directed the work of the tractors. This is Mr. Hildebrand, who had general charge



No machine is more entitled to carry the flag than the farm tractor



Hauling manure is one of the tasks for which a tractor having speed as well as power is most desired

FARM and FIRESIDE
THE NATIONAL FARM PAPER

Harry M. Ziegler, *Managing Editor*
Associate Editors:
D. S. Burch B. F. W. Thorpe Ruth M. Boyle

Published Twice a Month by
The Crowell Publishing Company
Springfield, Ohio
GEORGE H. HAZEN, President

Executive Offices: 381 Fourth Avenue, New York City. Branch Office: Tribune Building, Chicago.
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

H. J. Brown, Jr., *Business Manager*
D. W. Henderson, *Advertising Manager* L. V. Rodda, *Circulatian Manager*

Subscription Price
One year (24 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents a year.

About Advertising
Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.
Advertising rates and regulations furnished upon request.

September 1, 1917

Is America Lukewarm?

IMMEDIATELY upon the declaration of war with Germany the gloom-makers in this country got busy manufacturing dismal uncertainties as to the part America would be able to play in the war. Could democratic America ever organize efficiently enough to beat autocratic Germany? Could the vast half-assimilated foreign population ever be mobilized into one loyal army? Would the American people, educated for years in peace principles, ever do more than acquiesce half-heartedly on their part in the bitterest war in history?

We still hear that the great bulk of American citizens are apathetic, that they are not yet awake to a full realization of what this war means. It is true that they are quiet; they ought to be. For three years they have been reading descriptions, pitilessly detailed, of the waste and pain the war has been creating in Europe.

They are going into the war, not as a three months' holiday from the regular business of life, but realizing to the full the grimness of the job before them. And so the response has been a quiet one, but so businesslike and determined as not to leave a shred of doubt as to what they mean to do.

The response in men and money has been immensely convincing. Without any splurge or fuss, 182,000 volunteers have enlisted in the regular army; 137,000 men have been added to the navy; the Marine Corps has been raised to its full authorized strength of 30,000 men; the National Guard with 300,000 men was quietly drafted into federal service in August. Altogether over 800,000 men were under arms before the draft became operative; that has added 687,000 more, making a total of 1,500,000 men under orders September 5th. All this in spite of our enormous alien population and our anti-militaristic education. We have oversubscribed a two-billion-dollar war loan and have given a hundred million to the Red Cross.

If this is apathy, what would the American people do if they once got interested?

County Agent Worth While

IS a county farm agent worth while? In Chariton County, Missouri, there are 150 farmers who have answered this question in the affirmative.

Early in April of this year a number of leading farmers of this Missouri county met and talked over the county-agent question. Many of those present at this meeting had been watching the work of county agents in other parts of the state. Discussion soon developed the fact that there was a decided sentiment for work of the kind in Chariton County. Two objections, though, seemed to arise. It was known that among the farmers of the county were some who did not favor the employment of an agricultural agent or farm adviser. Others who favored such an officer were not satisfied with state and federal supervision of his work. Both objections were anwered, and a fine story it is.

By May 1st, without any hurrah or excitement, 150 farmers had deposited with the county treasurer money sufficient to pay a county agent a salary of $5,600 per annum for three years. Before the middle of the month Sam M. Jordan, "the corn man," pioneer county agent in Pettis County, Missouri, for three years, had signed a contract and was on the job.

War-Devastated Farms

BEFORE the despoiling hand of war destroyed the world-famous fruit-growing regions of the Loire River, France, that area represented no small part of the productive power of a great horticultural nation. But those splendid fruit orchards and vineyards were practically shot-and-shelled out of existence during the long months when the battle fronts were creeping to and fro over that region. It need hardly be said that the renewing of those orchards must be a task of years. But already there is an eager, unanimous effort under way to prepare for the work of orchard restoration. The nursery and fruit-growing organizations of this country are planning to co-operate in the redevelopment of those war-ruined orchards.

At the annual meeting of the American Association of Nurserymen, held at Philadelphia, the newly elected president of the association, Lloyd Stark, promised the hearty support of that association in furnishing nursery supplies.

What is true of the French fruit district named will be true of all the important agricultural and horticultural interests of Europe where the war desolation is greatest. Not only are orchards and vineyards being destroyed, but also fences, drains, terraced hillsides, live stock, and entire farm equipments.

In no other way can America hope to accomplish more for disheartened, discouraged, war-battered France than by making advance preparations to help restore her agriculture.

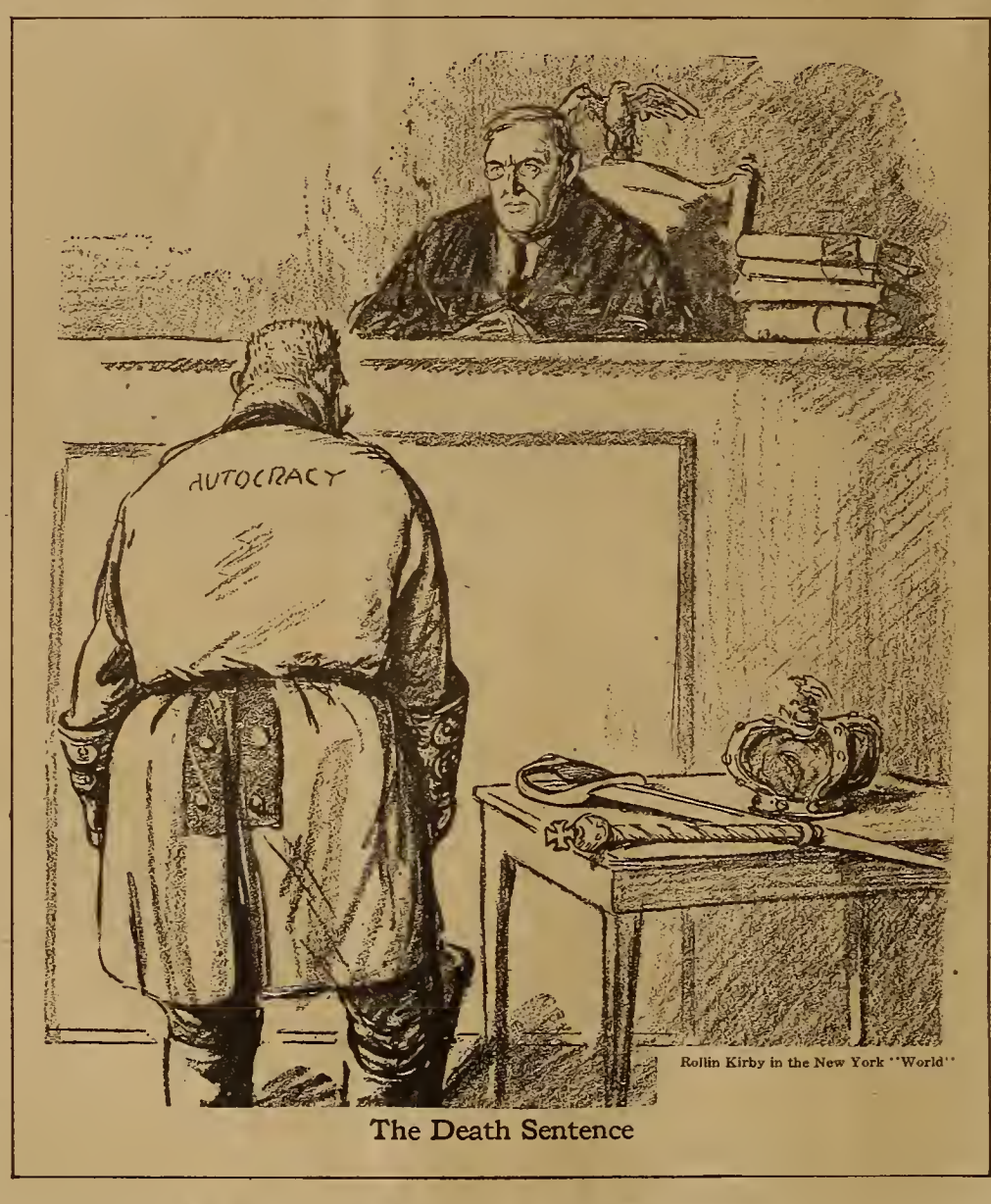
A War Zone for Gophers

NEBRASKA farmers, imbued with a practical brand of patriotism, believe it not enough to speed up production of food supplies. As a war measure they have undertaken a systematic campaign against the gopher for the conservation of crops. These destructive rodents are charged with doing a million dollars' worth of damage to a single crop—alfalfa—in one State annually.

A gopher war zone has been proclaimed, with captains in charge of poison squads to distribute poisoned bait at stated intervals. The county commissioners furnish the poison in wholesale lots.

In one typical Nebraska county 375 square miles of farming land is included in one zone where the poison squads have gone into action with "Exterminate the Gopher" as the watchword.

What could be better at this critical time of world hunger than to adopt a country-wide declaration against rodents generally, including gophers, prairie dogs, ground squirrels, and what may be styled our domestic rat. The destruction of food suitable for man and beast by rodents is each year a staggering total.



The Death Sentence

Our Letter Box

Defends Earth Roads

DEAR EDITOR: Your editorial page of April 7th inspires the following:

The farmers of Nebraska do not want farm demonstrators. Of our more than ninety counties only eight or nine have them.

We had one in Merrick County, as good as any, but he went, and no one has asked for another.

Farmers are as competent to manage their own affairs as are bankers, business men, and editors. "Uplifters" would confer a great favor on farmers by minding their own business.

The undoubted purpose of the Federal Aid Road Law was the construction of hard-surfaced roads; and, any statements of the Secretary of Agriculture to the contrary, there is always a hole left to crawl out of. Note the language, "even" the earth road, as if that were the poorest of all roads. Yet it is what Nebraska farmers want, and what the "good roads" people do not intend to give.

The Department of Agriculture is on record as saying that by reason of the heavy traffic from Omaha to Lincoln a hard-surfaced road is required, but the same sort of logic would require a hard-surfaced road wherever in Nebraska it is proposed to use federal aid. When it was found that the farmers would not stand for the high-priced roads, the "good roads" people resorted to the dishonest trick of trying to make them believe dirt roads would be built.

CHARLES WOOSTER, Nebraska.

EDITOR'S NOTE: Seldom indeed does FARM AND FIRESIDE receive aught but good words for the work county agents are doing. Are Nebraska's needs so different from those of other sections of the country? Do Nebraskans generally agree with Mr. Wooster's views?

For Home Patriots

DEAR EDITOR: I see so many letters about what the soldier boys may do to prepare to defend our country, and what the city men and women can do in these war times. The farmers can feed the world. Our women of both city and country can help in the Red Cross work. But what can the young boys and girls do? We girls cannot all be Red Cross nurses.

Any girl should be able to can a few cans of tomatoes, green beans, and put up some pickles. Shell beans, butter beans, limas, peas, potatoes, and pumpkins can be stored away for winter supplies.

Perhaps some would choose to raise a pig or baby beef for the meat supply, and out West plant milo, kafir, and feterita, which can be used as flour.

Where is the girl who would not aid her country in this time of need? The great question of to-day is that somewhere our country needs each one of us, and it's calling for us too. Your place may not be to care for the wounded or to defend the States—your place may be to help feed the armies. Let's be planting, growing plants, and especially saving food supplies for the boys at the front.

You girls who have no brothers in the army, just "adopt" one. You can write him long letters about the life here and send him a basket of goodies once in a while. Words cannot tell you the joy a letter, even from a stranger, brings to a lonely soldier or sailor lad's heart.

WINNIE MCCAIN, Texas.

Just What Florida Needs

DEAR EDITOR: I was very much interested in the article on "Home-Grown Binder Twine." Mr. Cristadoro seems to know what he is talking about, and it seems to me that the New Zealand flax is just the plant we Florida people have long been looking for—something we can raise on our untold thousands of acres of unused lands. You deserve the thanks of the State for calling our attention to the subject, and I trust that our experiment station and our Congressmen will get busy and see that we have a chance to test the new fiber plant as soon as possible.

FRANK C. STOCKING, Florida.

Likes the Shopping Service

DEAR EDITOR: Your new venture in establishing a purchasing department for us farmer folks delights me so that I must express my real gratification in it. The dollar waist is so much prettier than the ones I purchased in the nearest large city.

It is a boon to have a skilled shopper get the garments that are appropriate, when we ourselves simply can't buy or make the proper things we have never seen. The chicks and calves and the garden all claim our attention and we just haven't time to think out the clothes problem.

You will be a real blessing to us if you do not follow the beaten track. So many of the women's papers have gone beyond the average farm woman's purse, though they began fairly well.

Stay with us, dear FARM AND FIRESIDE, for we need you. But, please, when the fall clothes appear will you offer things for the mature woman as well as for the young girl? We want to dress correctly too. ANNA R. CHENEY, Ohio.

Prosperity from Evening Reading

DEAR EDITOR: When I was a young man at the age of twenty-one I left the oil fields and went to farming. I went in among a lot of old farmers, and I farmed just as they did. And the longer I farmed the poorer I got. Well, I kept farming until the next thing the sheriff was out, and I had to borrow money and mortgage the farm.

To-day I have it all paid and my farm is in better shape than any of those adjoining me. How did I get out of the rut? I went to reading your FARM AND FIRESIDE and other farm papers and practiced what they preached. I can see now that an evening with the paper is time well spent.

A. F. BURTON, Pennsylvania.

E.W

Homewood Farm Barns, Property of Wm. Butterworth, Moline, Ill.

A SOURCE OF REAL SAVING

A great many motorists look upon the tires they use simply as a source of expense.

They consider the purchase of such equipment as just one unprofitable investment after another.

But the Goodyear user looks upon his tires somewhat differently—he sees in them a source of real saving.

For he realizes that tires are necessary to the usefulness of his car, and that the extra service Goodyears give is just so much clear gain.

This extra service that Goodyears give is not fanciful nor speculative, it is very real.

It includes more miles than could safely be expected from other tires—more comfort, and greater freedom from trouble.

It is due to the conditions under which Goodyear Tires are built, and to the materials which go into them.

It is the end to which every energy and impulse of these great factories is spent.

Goodyear users may well look upon their tires as a source of real saving—Goodyear Tires are built to be just that.

They are made to endure, to deliver the highest type of satisfaction under all conditions of service.

They are large of girth and thick of tread, that they may stand the scuff and pummeling of the road without faltering.

They are stout of structure and tough of substance, that they may wear slowly and with stubborn reluctance.

More Goodyear Tires are sold in these United States today than any other brand.

This would not be true if Goodyears offered anything less than conspicuously better value.

And the margin of Goodyear leadership is constantly growing greater.

Which is clear evidence that the better value in Goodyear Tires is consistent and invariable.

Sometime *you* will come to Goodyear Tires—sometime you will reap the benefit of the extra service they give.

When you do come to them, buy them of the Goodyear Service Station Dealer near you.

He is equipped and ready to help you get from Goodyear Tires the final mile of service we have built into them.

That is his mission, one he is pledged to fulfill with all the abilities at his command.

Ask this Dealer to tell you about Goodyear Tubes—*better* tubes—and what they mean in lowering tire costs.

And ask him to show you the Goodyear Tire-Saver Kit, which, as a primary factor in tire conservation, certainly should be in your car.

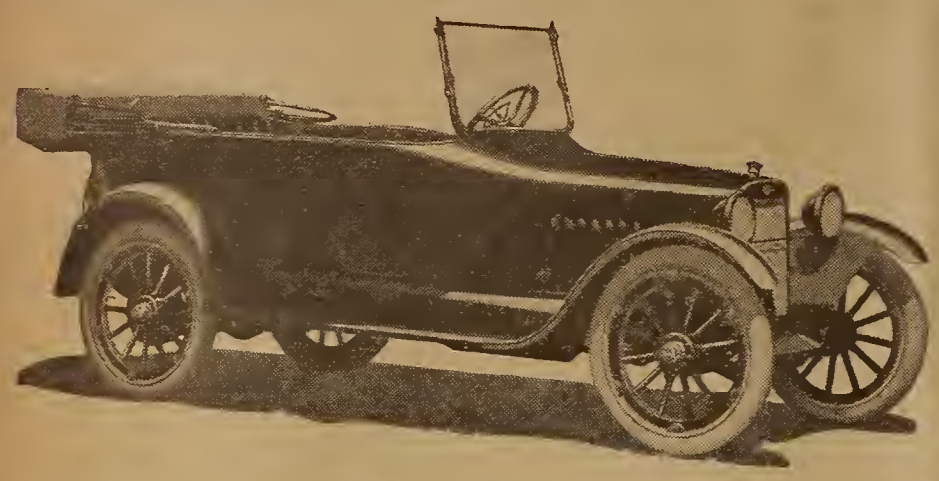
The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR
AKRON

E-W

SAXON "SIX"

A BIG TOURING CAR FOR 5 PEOPLE



25.9 Miles Per Gal. of Gas

To give a national demonstration of the remarkable gasoline economy of Saxon "Six," 234 Saxon dealers joined in a 300 mile drive July 18.

A grand average of 25.9 miles per gallon of gasoline was registered for the 70,200 miles of travel.

Consider that this run took place in 234 different parts of the country, under 234 different sets of conditions, over 234 different kinds of roads.

Consider that these 234 cars were stock model Saxon "Sixes," not "tuned up" special cars, not cars with "doped" gasoline.

That proves that this 25.9 miles per gallon of gasoline is the ordinary, the *average* performance of 234 Saxon "Sixes" taken right out of stock.

And it proves, as nothing else would prove, the gasoline economy your Saxon "Six" will give you.

Furthermore, these 234 Saxon "Sixes" averaged 175 miles per quart of oil.

No other car in its class can match this record. No other car offers such a combination of value features. The price of Saxon "Six" is $935 f.o.b. Detroit.

(178)

SAXON MOTOR CAR CORPORATION, DETROIT

Quick Shipment

No Waiting

Big stocks in our warehouses insure prompt filling of your order. Write today and get manufacturer's wholesale price on the Kalamazoo Pipeless Furnace. Heats the whole house. Burns any fuel. Kalamazoo Pipe Furnaces where desired.

A Kalamazoo Direct to You

Heating Plans FREE

Write Today and get our new book on home heating. Learn what you can save in fuel bills this winter. High-priced fuel makes Kalamazoo savings bigger than ever. Cash or easy payments. We pay the freight and guarantee safe delivery.

Ask for Catalog No. 921

KALAMAZOO STOVE CO.
Manufacturers KALAMAZOO, MICH.

The HUBER Light Four

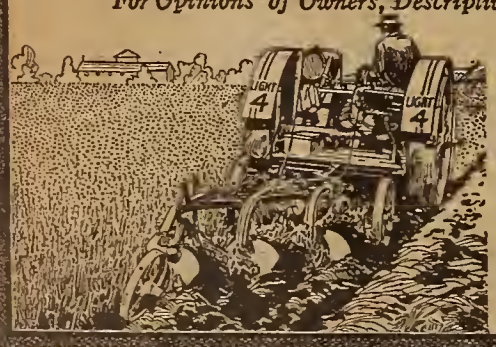
The Efficient Unit of Farm Power

FROM the day of breaking ground until the last grain is harvested and delivered to market, the Huber Light Four meets every power requirement of the large and medium sized farm. Less costly to own and operate than the larger tractors, more powerful, simple, economical and adaptable than the ordinary small tractor.

Easily pulls three plows. Turns an acre an hour on 1½ gallons gasoline. Turns in 6 ft. radius. Never overheats. Waukesha Motor direct drive 12 H. P. at draw bar, 25 H. P. at belt. Plows, harrows and drills without packing the ground. Road speed 4 miles per hour.

Operates harvesting machinery, thresher, binder, baler, etc. Fills the silo. Saws wood. Pumps water. As easy to operate as a Ford. Always ready. Lasts a life time.

For Opinions of Owners, Descriptive Literature, etc., Address:



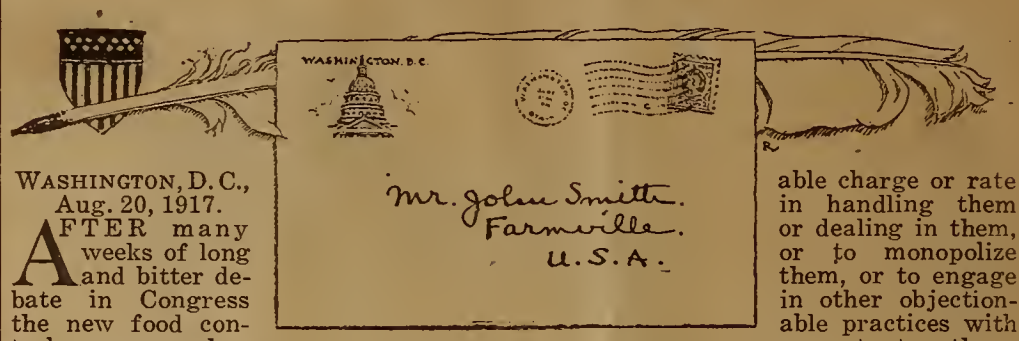
The Huber Mfg. Co.
Established 1873
353 Street Marion, Ohio

THE HUBER Light Four

Food Control Measure

Important War Bill, Long Debated, Takes Shape

By JOHN SNURE



WASHINGTON, D. C., Aug. 20, 1917.

AFTER many weeks of long and bitter debate in Congress the new food control measure has finally been passed. Of all the war legislation which has been proposed since the United States entered the war, nothing has outranked this either in importance or in public interest.

With the Food Control Bill enacted into law, the next question is its administration. On this the eyes of two continents are fastened.

Herbert C. Hoover has been chosen by President Wilson as the country's food administrator. Mr. Hoover's critics call him "food dictator." He shrinks from this title. All the same, if he fully exercises the powers which are conferred in the new legislation he will be as much a dictator as one can be in this country. And we may expect that if government food control proves a success in war, there will be a tremendous movement for continued government control in time of peace.

The measure, according to its own language, is intended to provide further for the national security and defense by encouraging the production, conserving the supply, and controlling the distribution of food products, feeds, fuel, and some other articles. This gives only a most general notion of what it is all about.

We must bear in mind, also, that it has two phases—international and national. It will control the supply of foodstuffs and other necessaries available for shipment abroad to help the allied nations. For months, as we all know, the specter of famine has been haunting European statesmen. If England, France, Italy, and the rest of the Allies can be assured of enough to eat, they will feel that the war is already half won.

Moreover, we are sending great armies abroad. They must be fed.

However, the more we produce, the more wisely we conserve, the better we control distribution, the less we will feel the pinch when it comes to shipping heavily to Europe.

As already remarked, this is a war measure. But it is not wholly so. Why? Because of the presence in this country of that troublesome factor, the high cost of living. Most of us have been complaining about the high cost of living. Because of this, there is general demand from the consumers of the land that food control be exercised in a way to give them the relief for which they have long been crying. This is a phase of the situation which in a strict sense has no relation to the military problem of feeding the Allies and supplying the American troops who are sent to the trenches of western Europe.

The problem which confronts the Government is to see that liberal shipments of supplies are sent abroad and at the same time that the American public is not subjected to extortionate prices.

A BRIEF analysis of the Food Control Bill shows that it sets out by providing that certain things shall be considered as "necessaries." They are "foods, feeds, fuel, including fuel oil and natural gas, fertilizer and fertilizer ingredients, tools, utensils, implements, machinery, and equipment required for the actual production of foods, feeds, and fuel."

It then sets forth that it is essential for the security and defense of the nation to prevent scarcity, monopolization, hoarding, injurious speculation, and manipulations affecting the supply, distribution, and movement of such necessaries, and to establish and maintain government control over them.

To meet this situation the President is clothed with sweeping and far-reaching powers. He can create and use any agencies he sees fit for this purpose. Under this he can name anyone he desires as food administrator.

What are known as the anti-hoarding sections of the new measure make it unlawful, under severe fine and imprisonment penalties, for any person to hoard necessaries, to destroy or waste them for the purpose of enhancing the price, to conspire with reference to them, to make any unjust or unreasonable charge or rate in handling them or dealing in them, or to monopolize them, or to engage in other objectionable practices with respect to them. Speculation is subjected to control of the President.

Representative Gilbert N. Haugen of Iowa, veteran member of the House Committee on Agriculture, one of the members of the conference committee on the bill, an experienced farmer and business man, declared the anti-hoarding provisions were the most important features of the enactment. He sees in them the possibilities of relief to the consumer from extortionate prices of necessaries. At the same time he does not believe legislation will be injurious to the farmers and producers of agricultural products, because he looks for such products to command excellent prices while the war lasts.

An important provision with respect to hoarding says that accumulating or withholding of his own products by the farmer or gardener or any other person shall not be considered hoarding within the meaning of the act. The same is true of co-operative associations of farmers or gardeners, including livestock farmers.

SHOULD the Government find that necessaries are unlawfully hoarded, it may step in and seize and condemn them and then sell them. Furthermore, the Government may purchase, store, and sell wheat, flour, meal, beans, and potatoes.

To secure an adequate supply of necessaries for the army or navy or for any other public use connected with the common defense, the Government may requisition and take over for use of or operation by the Government "any factory, packing house, oil-pipe lines, mine, or other plant, or any part thereof, in or through which any necessaries are or may be manufactured, produced, prepared, or mined."

Obviously, if the President or any food administrator or other official under him exercises this power, it will be a marvelous change from the old order of things.

Under one section of the measure the President—in other words, the Government—can fix a guaranteed price for wheat. This price is fixed at $2 as a minimum for the year 1918 at the principal interior primary markets on the basis of No. 1 Northern spring or its equivalent.

Another feature of the new enactment relates to licensing. It provides that whenever the President finds it essential to license the importation, manufacture, storage, mining, or distribution of any necessaries and shall publicly so announce, no person after a date fixed in the announcement shall engage in the business mentioned unless he shall secure a license.

The President is authorized to issue such licenses and prescribe regulations concerning them.

It is to be borne in mind that, while the measure refers repeatedly to the President as being granted certain powers, the President in fact will not personally exercise them. They will be exercised through the food administrator, and that is what makes the personality and capacity of the man who is food administrator so vital.

Prohibition, too, has found its way into the food control measure. However, anyone must be blind who does not perceive that the prohibition requirements have been put in because of the growing strength of the national "dry" sentiment.

The measure in effect prohibits distilling of spirits for beverage purposes and importation of spirits, and gives the President power to restrict or prevent manufacture of wines and malt liquors.

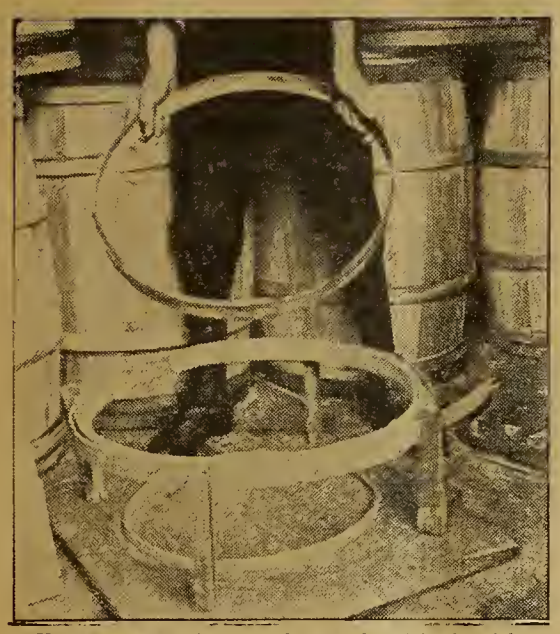
In order to carry out the measure, Congress provides an appropriation of $150,000,000. This will provide an elaborate organization which has already been largely built up. The sum named does not include $10,000,000 appropriated to procure and distribute nitrate of soda for use as fertilizer. Nor does it include $2,500,000 allowed for the expenses of the food administration, including rental, in Washington.

E

Barrels When Needed

Fruit Growers in Ohio Have Solved This Vexing Problem

By U. T. COX



These are setting-up forms furnished with barrels that are shipped knock-down

FOR twelve years apple growers here in Lawrence County, Ohio, have been buying cooperage to make their own barrels at home before the time for picking. We have them ready when needed, and we save in several ways. Generally the barrels are better than those made in factories that are rushed with orders. We also get our barrels for less money. Sometimes as much as 10 or 15 cents is saved on each barrel. The material can be hauled much cheaper than barrels that are set up, and can also be stored in less space. If one is short of storage space he can make up his barrels a short time before they are to be used. Where the orchards are located several miles away from the shipping point, we find it a great saving to haul the material rather than the ready-made barrels.

Car-Lot Buying Pays

When several growers order together and get the material in straight car lots—a car of hoops, three cars of staves, and one or two cars of heading—we make a saving over ordering it in mixed cars, as the hoops are made at one mill, the staves at another, and the heading at still another. In buying mixed cars there is an extra freight charge and the handling is more expensive. The cooperage in mixed cars costs about one and a half cents more per barrel than in straight cars.

For several years we have bought nothing but chamfered and crozed staves. Staves are cut several different thicknesses, but it does not pay to get the thin ones, cut six to two inches. Five to two are preferred, or five to one and seven-eighths.

For more than ten years we have made a saving in buying barrel material—and setting them up on the farm—of at least three cents per barrel compared with the factory price when bought in the summer before barrels are needed. But we save five, seven, and even ten cents per barrel as compared with fall prices when the picking and packing season is on. Previously we sometimes had to wait for two or three weeks for barrels besides incurring the loss on extra handling of the fruit and also the waste resulting from waiting.

We buy other fruit packages in car lots and then divide them. In a similar way we buy our spraying material co-operatively and get the very best goods at a nice saving.

After our experiment station proved it paid to use fertilizer on our orchards, we commenced buying the elements in straight car lots and used nitrate of soda and acid phosphate. We have gone slow on potash, as it did not show that it paid for orchard-fertilizing. And of late its cost is prohibitive for any purpose.

Nested barrels are the best barrels to buy if you do not care to make your own barrels. These barrels are made up just the same as any barrel. Then they are unheaded and the head put in the barrel it came from. Three hoops are also taken off the unheaded end and the barrels are fitted one inside the other until five to ten are in one bundle. They are loaded in the car this way. From 550 to 1,000 can be shipped in one car. Five hundred and fifty will take about the same rate as 350 headed-up barrels, which makes a big saving in the freight. As high as 250 can be hauled on a hayrack. This is a big saving where a long haul has to be made to the orchard.

Some growers prefer this barrel to the other headed barrels even when it costs more, owing to the saving in hauling. When the barrel is at the orchard it can be easily hooped. All you have to do is to put the three hoops back on and the barrel is ready to fill. This can be done quicker than a barrel can be unheaded.

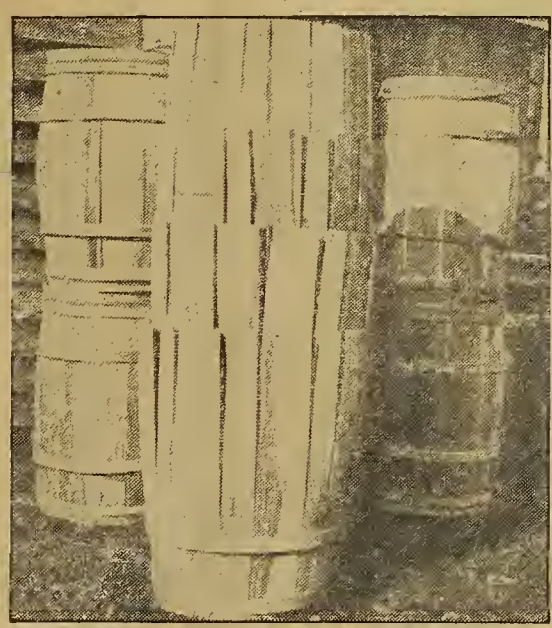
Sometimes the heads are put up in lots of 30 to 40 in a bundle. As these barrels are usually made by machinery, every one will be the same size and any head should fit any barrel. Likewise the hoops are all the same size. Most good up-to-date barrel manufacturers make these nested barrels.

Knock-down barrels are set up and then heated, and chamfer-crozed on special machinery at the barrel factory. The barrel is then knocked down and each set of staves to make a barrel bundled separately by itself. The headings are bundled in bundles of 15 to 20 sets. A set of heading is two heads. Any head will fit any barrel. The hoops are bundled in 10 hoops to the bundle. Up-to-date shippers of knock-down barrels usually furnish setting-up forms. With this form it is impossible for the barrel to fall down in process of making.

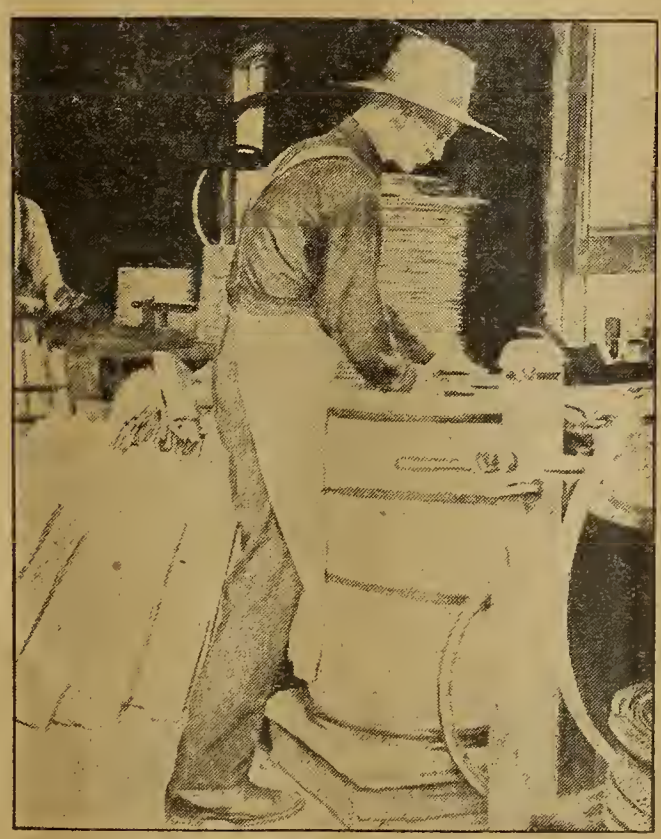
Figuring the cost of material in barrels is a very important matter in finding the cost of barrels. There are several methods of figuring stock. A favorite method is the following: Suppose the market price of staves is $0.665 per hundred; of the hoops, $1.075; and of the heads, $5.75 per hundred sets. As it requires 16 staves on an average to a barrel, first multiply 16 staves by $0.665. This gives the cost of the staves per hundred barrels, which is $10.64. The cost of hoops, at six hoops per barrel, will be $6.45 per hundred barrels, and the heads will be $5.75, making the total cost $22.84.

Locating the home shop is an important matter. The shop should be located in a convenient place, handy to unload staves, load barrels after they are finished, and also near the orchard or place where the barrels are to be used.

For the apple grower it is a good plan to have the shop right in the orchard. The workshop should be 20x20 feet for one man. More room is needed for making barrels by machinery. A shed 30x10x8 feet will hold about a car of stock.



Nested barrels are shown in the foreground. This method of shipping saves freight charges



"Buying the barrel parts early in the season and putting them together ourselves is the method we prefer"

Cider—a By-Product

By Samuel Thorne

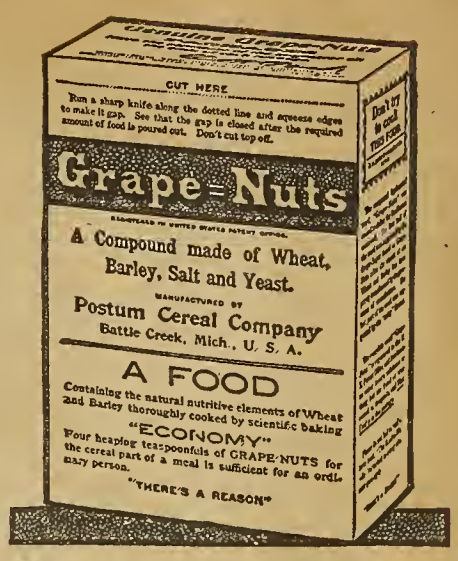
AMONG the many influences of the war that will affect farmers until world peace again reigns will be the unusual demand for large amounts of what have in the past been considered as by-products of various kinds. One of these is cider and other fruit juices for making vinegar and condensed flavorings.

The great hosts of army and navy men on the war fronts and aboard fighting and transport vessels will need plenty of seasoning and relish material to help give variety to the canned and processed foods forming so large a part of army and navy fare. It is none too soon for fruit growers to get ready to meet this demand by planning to make use of all fruits unsuitable for marketing in fresh, canned, or dried form, as cider for fruit syrups and vinegar.

Heretofore, in every important fruit-growing district, the quantity of fruit suitable for cider-making which has been allowed to decay has been enormous. Ofttimes the returns for cider when ready to market were hardly sufficient to cover the expense account. But now the situation has materially changed, and even small quantities of unsalable fruit worked up into good quality cider with hand-power or small power outfits will help to supply our own fighting men and allies with appetizing variety, and will keep without spoiling in any climate.

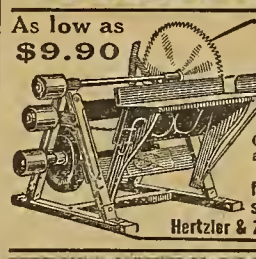
Cider-making machinery has been perfected to a degree that now enables the making of a high-quality product with a great saving of time and labor, and where the quantity of fruit warrants the larger sized equipments the work can be almost entirely done by power machinery.

Another important aid to fruit-growing, incident to cider-making, is the opportunity to destroy myriads of insect pests contained in unsalable fruit. The worm-laden fruit can be sorted out and fed to stock.



The wholesome nutrition of wheat and barley in most appetizing form

As low as $9.90



$10,000.00 Backs this Hertzler & Zook Portable Wood SAW

This is the cheapest saw made. Only $9.90 saw frame to which a ripping table can be added. Guaranteed 1 year, money refunded and all charges paid if not satisfactory. Write for catalog.

Hertzler & Zook Co., Box 9, Belleville, Pa.

HOOSIER STOVES & RANGES FREE

To try in your home 30 days free no matter where you live. Show your friends, send it back at our expense if you do not want to keep it. Million members of families enjoying the comforts and pleasures of "Hoosier" Stoves & Ranges, perfect bakers and heaters, beautifully finished, smooth latest design, guaranteed for years.

Write for our big free book showing photographs, describing large assortment of sizes and designs of Steel and Cast Ranges, Cooks, Soft and Hard Coal Heaters, to select from, explaining our free trial. Send postal today.

HOOSIER STOVE CO.
126 State St., Marion, Ind.

10,000 Miles Guarantee on Brictson Tires

A specific 10,000 mile written guarantee for every Brictson Tire user. Tire economy and protection against punctures, blowouts and rim cuts. Brictson Tires are rut, oil and gasoline proof and wonderfully resilient and easy riding.

TRY BRICTSON TIRES AT OUR EXPENSE

Find out at our risk the wonderful service qualities of Brictson Pneumatic Tires. Don't pay unless satisfied. Write today for details of Free Trial Plan and descriptive book.

THE BRICTSON MFG. CO.
85-97 Brictson Bldg., Brookings, S. D.

SAVE $20 to $40 Buy NOW

It will pay you big to take advantage of my "After Harvest" Low Prices that I am offering those who BUY NOW. Others have raised prices—I have cut them. Just drop me a postal for my big, new

SPLIT HICKORY

Catalog showing 150 Styles and my latest Bargain Price List. Don't wait until Spring—save $20 to $40 by buying NOW. Every Split Hickory Rig Guaranteed 2 years. 30 DAYS' FREE ROAD TEST. Famous as "Best Built Buggies" money can buy. Don't miss this opportunity to save money. Write for FREE Catalog today. H. C. PHELPS, Pres.

The Ohio Carriage Mfg. Co.
Station 27
Columbus, Ohio

51

Write For My Big New FREE Buggy Book Now

Blast Beds for Trees, Get Sturdy Roots

Trees planted in blasted holes developed deeper and stronger root systems than those in spade-dug holes, the N. J. Experiment Station found. Trees in blasted beds bear two years earlier.

Atlas Farm Powder
THE SAFEST EXPLOSIVE
The Original Farm Powder

is easy to use for digging ditches, clearing land of stumps and boulders, subsoiling, etc. Just punch a hole, load, light a fuse and the work is done. Write for our free book, "Better Farming." It tells how to make more money by using Atlas Farm Powder—the cheapest farm hand.

ATLAS POWDER COMPANY
Dept. F. F. 26, Wilmington, Del.

Picking the Tip-Toppers

By Orin Crooker

SOME of the choicest specimens of fruit generally have to be shaken from the highest branches and are about a dead loss; but with the picker here shown one may detach choice apples, pears, peaches, plums, etc., from the topmost branches of the trees and allow them to slide one by one through a long cloth tube into the hand of the picker without the slightest bruise. The picker is best made from a stiff bamboo pole, and the cloth tube is made of sufficient diameter to allow the extra large apples to slip through it easily. A loop of heavy wire, with a slight extension on one side, provides the means for loosening the fruit from the tree. The cloth tube is sewed to this loop.

When using the picker it is placed under the fruit, raised gently, and then

Getting the choicest specimens is worth a special effort

drawn toward the operator. Gravitation does the rest. One can gather the choicest fruit on a high tree quite rapidly in this way, and without risk of falls or broken bones.

Saving Ripening Tomatoes

A SUCCESSFUL means of saving tomatoes when ripening, when located near poultry runs, has been recently employed by Mrs. Grace Clemons, a Kansas gardener. She covered the tomato vines entirely with hay or straw that had little value for feeding. The hay or straw covering was applied loosely and the tomatoes were found to ripen perfectly under the covering. The hay covering was lifted from each tomato plant when the fruit was gathered two or three times a week, and then immediately replaced.

This experience of Mrs. Clemons suggests a similar plan of saving tomatoes from frost when the fruit is late in ripening. A few loads of weather-beaten hay or the remains of a straw stack may help to save a lot of valuable tomatoes by following out Mrs. Clemons' recommendations, and the roughage afterward, when plowed under, will be of double use as a soil improver.

Wild Cousins of the Onion

By S. H. Garekol

THE "breath" of many varieties of onion is too strong for many persons' taste. For these, two cousins of the onion—chive and garlic—make acceptable seasoning substitutes.

Chive is a small perennial plant known chiefly to the foreign element of our poulation. It has a decorative as well as a seasoning value, and makes an interesting plant for a permanent edging along the garden walk, partly because of its pretty green leaves and also because of its violet red flowers. Although quite hardy in any part of the country, a light covering of manure during the winter not only protects the chive bed from heavy frosts but will also serve as a fertilizer.

Chive rarely forms seeds. It is propagated by dividing the small bulbs which grow in clusters, and planting them 12 inches apart in rows. Any ordinary garden soil will grow chive. It requires no culture beyond keeping the ground free from weeds, and can be continuously grown year after year without change of location. However, I find it does better to replant it about every five years. The leaves may be cut freely and are soon replaced by others.

Garlic is grown for the "cloves," or little bulblets, about ten in number, which form a head at the top of the stems. These are enclosed in a thin white or rose-colored skin. The bulblets are used mainly for flavoring. It is closely allied to the onion, but will remain in the ground from one year to another, and if allowed to spread into farm lands is a serious pest.

It is propagated by planting the cloves early in spring or in the fall in mild climates. The bulbs are mature by midsummer or fall. Fertile and well-drained soil gives best results. It requires some hoeing and weeding by hand. After the heads are well formed, they are gathered with long stems and woven into braids for drying by hanging up in an attic or loft.

Paper-Blanched Celery

WHEN the plan of banking with soil is used for blanching celery, the rows must be so wide apart as to waste much valuable land in small garden areas. But by using paper sold in rolls for the purpose, and which is treated to make it tough and moisture-proof, much garden space and time may be saved.

Celery set with the intention of using paper for blanching need be only far enough between rows to allow convenient cultivation with wheel hoe, and two rows can be set not over 6 or 8 inches apart, with spaces 15 to 18 inches on each side of the double rows. When ready for blanching, the paper can be quickly stretched each side of the double rows. The roll is unwound along one side and back the opposite side of the double rows, thus requiring no cutting of the roll. While one person stretches the paper and holds it in place, another thrusts the long wire staples, made like narrow croquet arches, over the double rows to hold the paper snugly up in place.

If the right kind of paper can be procured and is carefully rolled and saved when the crop is harvested, it can be used several seasons. Try it.

A Winter's Supply of Truck

By Mrs. C. C. Wehmeier

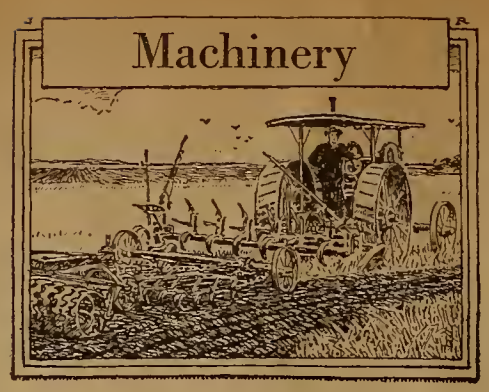
FALL planting of garden truck is a very different proposition in the Gulf States compared to what we were accustomed to when living on a corn-belt farm. Here fall gardens and truck crops are considered a better source of cash income than the spring crops.

This season we had roasting ears in May, here in Escambia County, Florida. But our main crop, planted to ripen in midsummer, is more successful and profitable as a rule.

From our main crop of tomatoes I canned 27 No. 2 tin cans for home use. Besides I have filled my pantry shelves with canned okra, green and lima beans (six gallons of the latter), sweet corn, and smaller quantities of less staple vegetables and small fruits.

The fall harvest of all our late-planted vegetables will bring us better prices in our local markets, and our own home supply being safely stored in cans, the fall plantings can be a source of cash income.

Last week I sold chicken friers for 35 cents a pound. Eggs at the same time were 45 cents a dozen, so the high cost of feed for poultry does not alarm us.



Tractor Attachment for Auto

By B. D. Stockwell

"I WOULD like some information," writes a Texas reader, "about the devices used for converting an automobile into a farm tractor. Are such attachments practical?"

I have seen two of these so-called make-a-tractor devices in operation, one of which was pulling a double-disk harrow and the other drawing a riding gang plow having two 14-inch bottoms, and turning a furrow eight inches deep. In both cases the rate of speed was about four miles an hour. The gear reduction is sufficiently great to permit the engine to run in high speed all the time and, considering the moderate cost of the device, the results were surprisingly good.

In warm weather, however, the motor is inclined to become very hot, and when the outfit is doing hard work, such as plowing, the water in the radiator may have to be occasionally replenished.

Cleaning a Drilled Well

By R. E. James

DRILLED wells of small diameter have a tendency to fill with mud and other rubbish that runs into them with the rain water. In spite of all the care one can use, sometimes a well will become so badly clogged as to go entirely dry.

I recently had trouble of this kind and tried to get a well machine to clean it and deepen it, but without success.

The method I then employed to clean it was a somewhat novel one. At least I have never heard of anyone else using it.

First I poured several buckets of water down the well and let the material in the bottom soak about half a day. I then filled a few No. 12 shotgun shells with some straight 60 per cent dynamite which I happened to have on hand. A blasting cap and enough fuse to reach to the top of the well was inserted in each charge and the top of the shell was then carefully covered with tallow to protect the cap from the water. I do not imagine my charge of dynamite weighed over an ounce and a half.

A number of these little charges were set off in the bottom of the well one at a time. The dynamite, of course, merely loosened the deposits. Getting it out after loosening it up was the puzzling problem for me, but I managed it in this way: I cut a five-foot length from an old three-inch boiler flue, bored two holes in one end, and ran a wire through the holes so as to make a handle somewhat like a bucket handle. A large hole was bored through the center of a piece of soft pine wood, which was driven into the other end of the pipe. This was made to fit tight, as the object was to keep out the water. A small piece of leather weighted with a little piece of iron was then fitted over the hole to make a valve. Of course this was fitted on the inner end of the wooden plug with the hole through the center.

The water that had been poured down the well on top of the deposit which had been loosened up by the blasting made a thin mud. A piece of rope was attached to the pipe through the bail, and with it I let the contrivance down into the well, and by dancing it up and down for a short time I was able to get it to fill with the thin mud through the valve. It was then lifted up and emptied and the operations of blasting and bailing continued until I had the well cleaned.

It was not only mud that I found in the bottom of my well—fully eight feet of it was made up of drill cuttings.

My little experiment proved so successful that a neighbor whose well was dry asked me to clean it out for him in the same way, and I succeeded in getting 18 feet of water in his well.

Leather or Fabric Belting?

"FOR belting a four-horsepower gas engine to a line shaft, which is better, a leather or a fabric belt? All of the work is done indoors."

Either a leather or a cotton-fabric belt may be used under such conditions, but if a belt shifter is used, leather belting will prove to be more durable. Shifters have a tendency to wear the edges of fabric belts, causing them to unravel and become tattered. Otherwise well-made belting of either material is about equally strong and satisfactory.

Self-Steering Tractors

"WHAT is your opinion of self-steering devices for tractors, and will such a device guide the tractor without attention from the driver?" These two questions are frequently asked.

A self-steering device on a tractor is a decided convenience and enables the driver to give his attention to the plows or other matters. I have known of tractors traveling distances up to half a mile alone, while the driver walked along behind. But that practice is not

The two disks traveling in the furrow ahead of the tractor guide it automatically

to be encouraged. The driver should be constantly in control. The self-steering device, of which there are several kinds, however, is a good thing and has come into general use.

To Blast Big Stumps

By A. H. Harris

ABOUT the first work I did with dynamite was to tackle a big field of stumps. For this I used a 40 per cent grade, which is about the proper thing to use for stump-blasting on ordinary soils. I find that on low, boggy ground, where the stumps are very large and tough, it is more economical to use a higher grade of dynamite, such as 50 or 60 per cent, placing it under the stump and firing electrically by a blasting machine. All very large tough stumps over three feet in diameter, such as oaks, hickory, and elm, should be blasted only by this method.

The distributed charges will then all go off together, and the combined effect of the several charges so distributed will give a much better blast than putting the entire charge in one hole bored directly under the stump.

A few months ago a neighbor of mine excavated a ditch through a low bottom field of his which was very much subject to overflow. In the digging of this ditch he encountered several large willow stumps which were at least one hundred years old but still in a pretty sound state of preservation. Knowing that I was accustomed to using dynamite, he called upon me to blast out these stumps standing in water, for it was too wet and boggy to get them otherwise.

I find that blasting for tree-planting, either for fruit or shade trees, is one of the most profitable ways of using dynamite.

Specimens of Yams and Jersey sweet potatoes grown in eastern Nebraska. Stringy roots (top row left) are a sport variety

E

The STAUDE Mak-a-Tractor Has Made Good!

It has made good in every state in the Union! On more than five thousand farms it has been doing the work of a 4-horse team—in the field and on the road—plowing, pulling binders and hauling grain to market.

In fact, there never was any question about the STAUDE Mak-a-Tractor standing up to its work. It is America's most useful farm implement. Our whole problem has been to impress the farmer with the necessity of keeping his FORD in proper running condition—and not trying to pull more than four good horses could handle. Our faith in the Ford has been more than justified. It has proved to be a perfect tractor power-plant under all conditions—provided directions have been followed.

The sturdy Ford has made the STAUDE Mak-a-Tractor possible—and the STAUDE Mak-a-Tractor has enabled thousands of farmers to turn their Ford cars into the least expensive and most efficient light Farm Tractor that the world has ever seen.

We Have Hundreds of Letters Like These

"We pulled large stumps with it and there is not one shadow of doubt as to the power one can get from it."
—A. N. SMITH, Supt. Agricultural Dept., Baudette, Minn.

"I plowed 60 acres of ground in 8½ days, using a Rock Island 14-inch gang. I also worked 80 acres of ground into shape to plant corn, besides putting in 35 acres of oats with my STAUDE Mak-a-Tractor."—HARRY H. ADCOCK, Alexis, Ill.

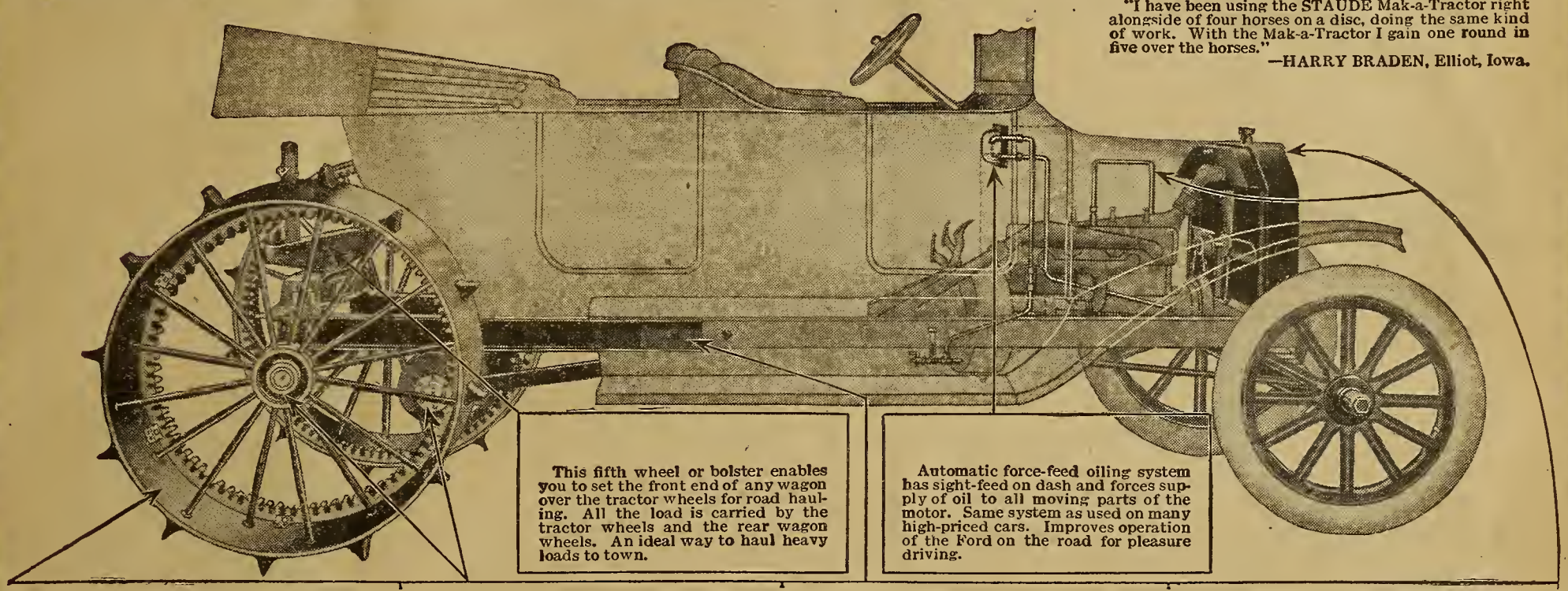
"I plowed 21 acres of heavy clay loam in 5 days, pulling a 2-disc plow averaging 6 inches deep."
—U. C. DAVIS, Flat Willow, Mont.

"I have a STAUDE Mak-a-Tractor....hauling feed (50 sacks corn per load) 40 miles north to sheep camps. Drive wheels running in gumbo 4 to 8 inches deep all the time."
—S. D. DUER, Nisland, S. D.

"The STAUDE Mak-a-Tractor will do the work you claim and do it satisfactorily. It will not hurt the car any more than running it on an ordinary road."
—ANTON J. HAUGLIE, Brandon, Minn.

"I am using my STAUDE Mak-a-Tractor on the manure spreader and it works fine. It is much cheaper than horses."
W. G. HEIFORT, Withrow, Minn.

"I have been using the STAUDE Mak-a-Tractor right alongside of four horses on a disc, doing the same kind of work. With the Mak-a-Tractor I gain one round in five over the horses."
—HARRY BRADEN, Elliot, Iowa.



Tractor drive wheels are steel—8 inches wide—with removable mud lugs for use in soft ground. Will not sink in any ground fit to work over. Extension rims furnished for very loose soil.

Tractor-hub and axle bear all the weight of rear end of car, pushing car ahead and pulling implement. Implement is hitched to tractor axle. Short arrow points to roller pinion gear which fits on end of regular Ford axle and intermeshes with bull gear. Ford axle merely turns the pinions. Tractor wheel hubs have roller bearings.

Tractor frame-work clamps to Ford chassis without boring holes. Tractor frame connection is flexible and easily detached to roll back the tractor wheels and replace regular wheels for pleasure driving.

Our 1918 cooling system is the most efficient cooling device ever placed on tractor or pleasure car. Consists of special Perfex Radiator, Injector Water Circulator, Giant Suction Fan with broad belt and lagged pulley. Gives you greatly increased cooling capacity over the regular Ford. No change in appearance.

1918 Model Is Now Being Delivered!

A Bigger Value Than Ever at the New Price!

All orders are now being filled with the new 1918 Model 2-speed outfit — 2½ miles per hour for plowing and 4 to 5 miles per hour for hauling. The new cooling apparatus cools twice as fast as our 1917 job. Overheating is now impossible with the STAUDE.

Our experience with the STAUDE Mak-a-Tractor on farms in all parts of the country during the past year has been thoroughly satisfactory. In certain cases, however, our customers overloaded their machines or failed to keep their engines in good running condition, and as a result there was a tendency in extreme cases for the water in the radiator to boil. In order to make this absolutely impossible in the future, we recently spent over $50,000 of our own money equipping every job we had ever sold with the new 1918 cooling device—and this was done without a cent of expense to our customers.

In spite of greatly increased cost of materials, our tremendous output makes it possible for us to sell you the complete 1918 STAUDE Mak-a-Tractor, with two sets of pinions, for $5.00 less than our previous price on this complete outfit.

PRICES—Effective August 25th.

STAUDE Mak-a-Tractor with six-tooth pinions, force-feed oiling system and new 1918 cooling system **$225**

STAUDE Mak-a-Tractor with six-tooth pinions and eight-tooth pinions, force-feed oiling system, and new 1918 cooling system **$240**

STAUDE Mak-a-Tractor with six-tooth pinions and eigth-tooth pinions, force-feed oiling system, new 1918 cooling system and fifth-wheel bolster attachment for hauling..... **$260**

STAUDE Mak-a-Tractor with six-tooth pinions and eight-tooth pinions, force-feed oiling system, new 1918 cooling system, fifth-wheel attachment for hauling and perfect belt-power pulley device **$285**

For Belt Power

The wonderful STAUDE Cooling System makes this rig thoroughly efficient for belt driving. The power is transmitted to the belt pulley by the tractor wheels. Tractor axle is jacked up so wheels clear the ground. Car can be driven to next stand without removing pulley rig.

$25 extra when purchased separate.

Guaranteed to Do Average Work of Four Horses!

After having seen the STAUDE Mak-a-Tractor working in all parts of the country for over a year, we are willing to guarantee it more strongly than ever to do the average continuous work of four good horses, in the field or on the road. It is only necessary that you keep your Ford in proper running condition and follow our directions.

A youth or a woman can easily drive it in plowing or other field work, as it starts and runs entirely on high gear and steers easier than when running 20 miles per hour on the road. Does the work of four horses for the cost of keeping one, and can be run night and day during rush seasons.

When through work you can remove the tractor and replace regular rear wheels for pleasure driving in 20 minutes.

Mail the coupon now for descriptive catalog and name of nearest dealer. Don't fail to investigate the lowest-priced and most efficient farm tractor device on the market—proven satisfactory in every state in the country.

Mail the Coupon!

Now is the time to get ready for fall plowing and hauling. Save money and do it better and quicker by converting your Ford with the STAUDE Mak-a-Tractor. Buy now. Price may have to go higher before spring. Mail the coupon!

E. G. STAUDE MFG. CO., 2617 West University Avenue, St. Paul, Minn.

Plowing in June of this year with a 2-bottom gang near Janesville, Wis. The STAUDE travels faster than horses and never gets tired.

Listing corn in Kansas. Wheat failed and they had to plant the corn in a hurry. The STAUDE pulling two listers where 4 mules pulled only one.

Harvesting scene in the Southwest this year. Two STAUDE Mak-a-Tractors pulling bundle wagon and Stewart Sheaf Loader. They work day and night.

E. G. STAUDE MFG. CO.,
2617 W. University Ave., St. Paul, Minn.

Please send me full particulars regarding your STAUDE Mak-a-Tractor and name of your nearest dealer.

Name.....

R. F. D.....

Town .....State.....

TOWER'S FISH BRAND
REFLEX SLICKER
is a corker for staying on the job.
TOWER'S FISH BRAND
Waterproof Absolutely.
Satisfaction Guaranteed.
DEALERS EVERYWHERE.
A. J. TOWER CO. BOSTON.

RAISE BELGIAN HARES For Us
HUGE PROFITS easily, pleasantly made. We furnish stock and pay you $6.00 a pair and express charges for all you raise. Contract and book "Fortunes in Hares," 10c. Nothing free.
NATIONAL FOOD & FUR ASSOCIATION
Dept. 19 557 12th St., Milwaukee, Wisconsin

Steel Wheels
will make your old farm wagon as good as new. Save money because they never need repairs. Write for our big free book telling all about them and how they pay. Empire Mfg. Co., Box 768, Quincy, Ill.
BOOK FREE

Away with DEADLY POISONS
RAT CORN
KILLS RATS, MICE AND GOPHERS
25¢, 50¢ and $1.00 ALL DEALERS

YOU PAY NOTHING EXTRA
to have your horses shod with Capewell nails.
You do avoid the risk of having cheap imitation nails used—
You do have assurance that the nails will hold the shoe—
But it costs you not a penny more because Capewell nails sell at a fair price and all shoers can afford them. Ask for the Capewell.
THIS CHECKED HEAD OUR TRADE MARK

Hydraulic Cider Press Profits
Write for FREE Booklet Today
Thirty years' experience enables us to give you all the information you need for cider making.
Also Boilers, Engines, Sawmills.
E. B. VAN ATTA & CO., 118 Penn Ave., Olean, N. Y.

FREE
BROWN FENCE 150 Styles
Wonderful Money Saving Fence Book. Over 150 Styles. Gates-Steel Posts-Barb Wire 13¢ Per Rod Up
DIRECT FROM FACTORY-FREIGHT PAID
All heavy DOUBLE GALVANIZED WIRES. 13c per rod up. Get free Book and Sample to test.
THE BROWN FENCE & WIRE CO.,
Dept. 21E - - Cleveland, Ohio

Only $2 Down
One Year to Pay!
$29 Buys the New Butterfly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.
30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.
ALBAUGH-DOVER CO. (12)
2139 Marshall Blvd. CHICAGO
100,000 now in use

SELDOM SEE
a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.
ABSORBINE
TRADE MARK REG. U. S. PAT. OFF.
will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. $2 per bottle delivered. Describe your case for special instructions and Book 8 M free.
W. F. YOUNG, P. D. F., 23 Temple St., Springfield, Mass.

WITTE Kero-Oil ENGINES
Immediate Shipment
2, 3, 4, 6, 8, 12, 16 and 22 H-P.—Direct from the Largest Exclusive Engine Factory in the world, selling by mail. Nothing but engines. Quick Service—Big Saving—90 Day Trial, 5-Year Guarantee. Fuel cost one-half less using kerosene. Write for new book (copyrighted) "How To Judge Engines", printed in colors and fully illustrated, showing how I can save you $15 to $200—sell you on practically your own terms—Cash, Payments or No Money Down.—Ed. H. Witte.
WITTE ENGINE WORKS
2065 Oakland Ave., Kansas City, Mo.
2065 Empire Bldg., Pittsburgh, Pa.

Crops and Soils

Straw for Top-Dressing

By C. G. Hopkins

WHERE the farmer has straw going to waste, he may well recognize that it has high value for direct use on the land as a souce of organic matter. One ton of dry straw is equal to about four tons of average fresh farm manure, and in its content of plant food a ton of straw is fully equal to a ton of manure.

The value of straw for use in soil improvement is not fully appreciated by most people because its decomposition is slow and there is difficulty in getting it well incorporated with the soil. It should not be applied at a rate of more than two or three tons to the acre, and preferably some months in advance of plowing, in order to avoid the foregoing objection.

If the straw is allowed to lie on the surface for several months it becomes partly decomposed and brittle, so that it is more easily broken and mixed with the soil. It may be applied to pasture land at any time, and it may well be applied to meadow or stubble ground in the summer or early fall, where the plowing is to be done late in the fall or during the winter or early spring.

It is not well, as a rule, to apply straw shortly before plowing, especially in the spring, because it may give trouble in plowing, and also because where the straw is plowed under it may form a porous layer between the furrow slice and the subsurface soil which may seriously interfere with the upward movement of soil moisture.

A very good use of straw is as a top-dressing for winter grains, especially for wheat, barley, and oats, where they are subject to winter-killing. The straw may be spread any time during the early winter when the ground is in suitable condition, but probably the best practice is to make the application in the fall immediately after the grain is seeded. The crop will then grow up through the straw and help to prevent the straw from being blown off by the wind.

Apply Two Tons an Acre

Of course, the straw must be spread with reasonable uniformity. If too thick it will retard or destroy the growth of the crop. Probably two tons to the acre is as much as should be used as a top-dressing for small grains.

We still have much to learn concerning the use of straw as a top-dressing. But results already secured show that this is a matter of much importance. When applied in the fall or early winter, it tends to reduce the freezing and thawing of the soil during the winter and early spring, and this tends to prevent heaving. The straw affords some protection against severe cold, in part because of the straw coating and sometimes by also catching and holding more or less snow.

Where the winters are open, dry, and windy, as in parts of Kansas, Nebraska, Oklahoma, etc., the straw, applied before the fall growth of the grain crop, may itself be held in place by such growth and at the same time prevent the blowing and drifting of the soil.

To haul and spread straw, using only the pitchfork for scattering, is not an impossible task, and certainly not unprofitable if it makes the difference between a crop and no crop. On my own farm we have covered a good many acres in this way; but there are now some machines made for the purpose of spreading straw and, while they are not yet as perfect as one could wish, they are already being used to a considerable extent.

Our own experience with a straw spreader has been limited to winter conditions, and we have found that when the ground is frozen, more or less of the straw is also frozen, and not very satisfactory to work with.

So far as I am able to judge from the information thus far secured, clover seeded on fall-sown grain top-dressed with straw is more successful than where no straw is used, but if necessary such clover should be plowed under, pastured, or harvested for seed with a buncher on the mower, rather than used for hay, because of the danger of raking up too much of the straw, although where straw is applied so long in advance and in moderate amounts it sometimes becomes so brittle or rotten that the amount raked up is insignificant.

While the best use of straw is usually for feed and bedding, I cannot agree with the statement sometimes made that the grain farmer has no way of utilizing straw to advantage. Its value as a top-dressing is sometimes very marked and very quickly recovered in the larger crop yield, and its value for its plant-food content and as a source of humus is even more certain, although durability is perhaps a more important factor than ready availability in measuring its advantages.

Certainly there is no justification for burning or wasting straw, either on live-stock farms or on grain farms.

Stock on Sweet Clover

WITH the exception of alfalfa on fertile soils, no other leguminous crop will furnish as much nutritious pasturage from early spring until late fall as sweet clover, when it is properly handled. Live stock thrive on it. Animals which have never been fed sweet clover may refuse to eat it at first, but this distaste can be overcome by turning them on the pasture as soon as the plants start growth. There is practically no danger from bloat from sweet clover.

When sweet clover has been seeded two years in succession on separate fields, the fields sown the first year may be pastured until the middle of June, when the stock should be turned on the spring seeding. When handled in this manner excellent pasturage is provided throughout the summer and a hay or seed crop may be harvested from the field seeded the previous season.

Some of the best pasturages in Iowa consist of a mixture of Kentucky blue grass, timothy, and sweet clover. On one large farm stock is pastured on meadows containing this mixture, from the first part of April to the middle of June. From this time until the first part of September the stock is kept on one half to two thirds the total pasturage, while the remainder of the pasture land is permitted to mature a seed crop. Usually from two to four bushels an acre of recleaned seed are obtained from this portion of the pasture. After the seed crop is harvested, the stock again is turned on to this acreage, where they feed on the grasses and first-year sweet clover plants until cold weather. The seed which shatters when the crop is cut is usually sufficient to reseed the pasture.

The straw spreader, like the manure spreader, gives a uniform "coat" without bunches to smother new-seeded crops

Dairying

Selecting Dairy Cows

By Chas. E. Richardson

AFTER I had decided that the butter-making branch of dairy farming was the best form of agriculture for me, I was ready to purchase cows that would be good for butterfat production. I remembered once of reading in an agricultural magazine an editor's answer to an inquirer who wanted to know the best breed of poultry. The editor mentioned the different popular breeds of fowl and told the person that it did not matter much which breed seemed the best. If there was any breed the reader liked the best, that was the best for him to raise, as he would succeed better with the kind that he took the most interest in.

So it is possibly the same with cows. If I liked the Guernseys best I would take more interest and do better with them than with any other breed, though the other breed might be equally good. In studying the different kinds of cattle I learned that there were some especially adapted for beef purposes, others seemed to be better for butterfat production, and still others would fill the milk pail better.

Mr. Richardson and a cow of his favorite breed

So, as I was more interested in making butter, I decided that I would try and build up my herd with one of the breeds that would give milk with a high percentage of butterfat, although not quite as large a quantity of milk. For my business I concluded that the Guernsey breed would be the best. I am not bigoted enough to think that this is the best breed for everyone.

To start my herd I finally concluded to buy here and there a grade cow that seemed to be as near as possible to what I wanted, and then, after getting a start, to secure a pure-bred sire with a record behind him. After a few generations of breeding I would then have a herd consisting of practically pure-bred stock.

I had studied and read of the way to judge a good cow—that is, large milk veins, body wedge-shaped in the different ways of looking at it, and large udder with properly placed teats. But I also learned by experience some other points which I do not recollect ever reading about.

One morning a farmer who lives a short ways from me came in the yard and said:

"Do you want to buy a cow?"

"Well," I answered, "if I should run across one that looked good to me I might buy."

As my neighbor also wanted a cow, we drove to the next township together to look at a herd that was for sale.

Well, I soon picked out a cow that I liked. And my friend picked out one that he liked. I looked his cow over and said:

"Say, that cow hasn't much of any milk vein."

"Well," he replied, "I don't know much about those milk veins that you tell about, but I like her just the same. I never pick out a cow by those new-fangled ways."

"How do you?" I questioned.

"Why, I just size them up, and I try each teat to see if it milks easy."

E

That was a new one for me, though I could see that it was a good point. Anyone that has had to milk a few hard-milking cows will realize what an advantage it is to get an easy milker.

"Then I always feel the bag over carefully," he added, "to see if there are any lumps in it."

Well, I was satisfied with my cow, and I think that he was with his. I had picked out a cow with a lot of good points. But when I got my cow home and milked her, there were a few lumps in her udder. They never got worse, but I always feel the bag over now when I purchase a cow, and likewise see that the teats milk easy as an additional precaution.

Then I learned from watching other farmers that they look at a cow's front teeth to see how much they are worn. If worn a lot it means that she is apt to be old, while on a young cow they are not worn much, and are nice and even.

Corn Stover Made Palatable

ONE of the most practical suggestions for adding to the supply of meat products comes from Dr. F. B. Mumford, president of the National Defense Commission of Missouri, who urges that corn stover be stored in a palatable form instead of being allowed to stand in the field. "The amount of corn stover," says Dr. Mumford, "that is now practically wasted in the stalk fields of the Middle West would successfully maintain millions of cattle during the five-months winter feeding period. Corn stover is a coarse roughage. It will, however, maintain animals in good condition during the winter season."

It is often easier to save than it is to produce, and the saving in this case is about 20 per cent. The corn fodder may be first shocked in the field, and during the fall and winter, when time permits, may be run through a husker and shredder.

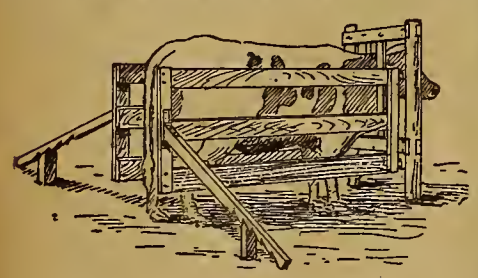
Huskers are now furnished with either a cutter or shredder head, so that the leaves may be either cut or shredded. The cutter heads are usually preferred, as they require less power and the cut fodder is less likely to spoil.

Safe Squeeze Gates

ON DAIRY and stock farms a well-secluded building for a hospital is always useful. It is seldom needed for calving cows, or for cases of lameness or ordinary accident. But for acute sickness, retention of afterbirth, abortion, or any symptoms of contagious diseases it is essential.

Whether you can have such a building or not, an arrangement similar to one used at the Illinois Experiment Station, known as the squeeze gates, affords an excellent method of holding cattle for treatment.

In a great many cases, especially with young cattle, they are chased until they become heated and excited; then



are roped and thrown. This is not only detrimental to the ailing animal but often puts them in a very awkward position to work upon.

With squeeze gates it is possible, with the aid of feed, to coax the animal quietly into the stanchion and use the gates if the case demands them. Even with milch cows that are more docile there is more or less danger, by the sudden movements of the cow, of breaking an arm when treating the genital organs.

For cases of abortion, where the genital organs should be constantly treated and freely dressed with antiseptic solutions, the squeeze gates are worth many times their initial cost, for when treating such cases the two gates are swung around and by means of racheted props the animal is held so it cannot move sideways, thus allowing the attendant to work with the greatest degree of satisfaction.

Salt Requirements

"HOW much salt should be given dairy cows?" inquires a Minnesota dairyman, who says that his cows seem to have an abnormal appetite for it.

A full-grown cow, giving a large flow of milk, requires about an ounce of salt a day. For the average cow, however, a pound and a half of salt a month is a reasonable quantity. Feed twice a week and be sure the cows have access to plenty of fresh water.

CHANDLER SIX

Do You Know Why More People This Year Are Buying The Chandler Six Than Are Buying Any Other High-Grade Car?

Do You Know Why in Four Years' Time The Chandler Has Passed and Left Behind, One by One, a Long Line of Other Well-Known Cars?

There are perhaps several reasons, all of which would appear very clearly if you had the opportunity or took the time to analyze the history and business policies of the automobile industry. But there is one big basic reason which to you as a motorist is the essential reason, and that one reason is this—that ever since the first Chandler car was designed and built and marketed four years ago last month, the Chandler has offered the finest of design, construction and equipment at the lowest possible price.

The Chandler today offers this excess of value, this dependability of service, just as distinctly as at any time in the four years past.

And how distinctly the Chandler has won its place in the very front rank of fine motor cars is reflected in the Chandler sales records of Nineteen-Fourteen, Fifteen, Sixteen and Seventeen.

Month by month and season after season thruout these four years the Chandler has moved forward and forward, until today its leadership could hardly be questioned.

Your own observation of high-grade cars in service in almost any market in America would show you clearly how surely the Chandler has come into leadership.

This leadership has been built on the Right Car at the Right Price.

The whole country has marveled at the Chandler motor, at its power, its flexibility, its life and get-away, and its endurance. The whole Chandler chassis has come to be recognized as a great mechanism.

Chandler leads because, starting with the right type of car, the Chandler Company has stood firmly by this type of car. It has continued to develop this car thruout these four years until today it approximates perfection in construction and performance.

We cannot convey to you in the printed page any full conception of the superiority of the Chandler motor, but any one of nearly forty thousand Chandler owners could put you alongside him at the wheel and show you Chandler superiority.

Let Us Show You Why and How Chandler Leads

FIVE ATTRACTIVE CHANDLER TYPES OF BODY

Seven-Passenger Touring Car, $1595 *Four-Passenger Roadster, $1595*
(F. O. B. Cleveland)

Dealers in All Principal Cities and Hundreds of Towns. Write for Catalog Today

CHANDLER MOTOR CAR COMPANY, Dept. DD, Cleveland, Ohio

FRANK MOSHER

"I Made $24 To-day At Our Little County Fair"

That's part of a wire we received recently from Frank Mosher of Kentucky.

Frank is just an ordinary chap in most ways, but he has an extraordinary way of going after the thing he wants and getting it. "Hustle" is his middle name. He began selling subscriptions to FARM AND FIRESIDE several months ago, he has made it pay him big.

Fred Harvey of *Indiana* is another man who has been making a big success with FARM AND FIRESIDE. He is also attending fairs in his home state. He recently secured 109 orders in one day.

FRED HARVEY

What These Young Men Have Done—*You* Can Do

WITHIN reaching distance of your home, will be held, are being held *now*, a number of fairs, where farmers gather from the surrounding country. You can meet them there in groups, hundreds of them, and they will subscribe for FARM AND FIRESIDE if you are there to sell it to them. Of course, they have to be convinced, but that's easy with a publication like FARM AND FIRESIDE and our co-operation. Mr. Mosher and Mr. Harvey are reaping a harvest of subscriptions by attending fairs. Mr. Harvey says:

> "I can canvass the whole community at one of these little fairs, everybody for miles around attends and they are usually in a receptive mood too. They come to see and learn and FARM AND FIRESIDE is so well thought of that it's easy to get subscriptions if you hustle and are courteous, honest and above all persistent."

Clip the coupon to the right now and send it in and let us tell you about our plan.

WE HAVE compiled a list of practically all the fairs held in the various states. We can furnish you information about the ones to be held close to your home. We will be glad to suggest the fairs you can attend without too much expense. We have open dates at a good many state fairs also. Enormous crowds attend these meetings. Ask for information about them.

Don't procrastinate: Opportunity will not wait: Clip the coupon and mail now.

ADDRESS
Agents' Department
FARM and FIRESIDE
Springfield, Ohio

CLIP THIS COUPON AND SEND TO-DAY

F. F. 2

Agents' Dept.
Farm and Fireside
Springfield, Ohio

Please send me your terms and plan for agents to cover fairs, and sell subscriptions to FARM AND FIRESIDE.

Name

Post Office

Route or Street and Number

County State

$1.95 Made to Your Order
Special Offer
to prove our fine quality: These fine Pants for Dress or Business, choice of many handsome styles, guaranteed for 18 months' solid wear and satisfaction or MONEY BACK, absolute $5.00 value—while they last, one pair to a customer. Express prepaid for only - - - $1.95
PANTS
No Extra Charges
No charge for Big Extreme Peg Tops or Cuff Bottoms, nothing extra for fancy Belt Loops or Pocket Flaps, no charge for Open Welt Seams or Large Sizes—all novelty features FREE.
This GOLD FINISHED PIN FREE TO YOU
Classy lapel pin with your first order, only a few hundred on hand, get yours quick.
Send No Money
Cash Profits to you for taking measures of relatives and neighbors. Young George Gekovich made $66.16 in one day. Write for free samples today.
Chicago Tailors Association
Dept. C-62 515 South Franklin Street, Chicago

FERRETS FOR SALE—Either color, any size, singles, pairs or dozen lots. Catalogue free. C. H. KEEFER & CO., GREENWICH, O.

SEED WHEAT BULLETIN FREE
Valuable information about New and Tested varieties—Kharkov—Harvest Queen—Fulitz, etc.—Timothy, Alfalfa, Clover and all field and grass seeds. Gives valuable planting instructions. Describes heaviest producing varieties—how best crops are grown. Gives money-making ideas about fall planting. Read it before you buy. No charge. Write today.
American Mutual Seed Co., Dept. 1142, Chicago.

MINERAL HEAVE COMPOUND
In use over 50 years
CURES HEAVES
Booklet Free
$3 Package guaranteed to give satisfaction or money back. $1 Package sufficient for ordinary cases.
MINERAL HEAVE REMEDY CO., 425 Fourth Ave., Pittsburgh, Pa.

30 DAYS' FREE TRIAL
and freight prepaid on the new 1918 "RANGER" bicycle. Write at once for our *big catalog* and *special offer*.
Improved Models, prices reduced. Extraordinary *new offers*. *You cannot afford to buy* without getting our *latest propositions*. WRITE TODAY.
Boys, be a "Rider Agent" and make big money taking orders for bicycles and supplies. Get our *liberal terms* on a sample to introduce the new "RANGER."
TIRES, equipment, sundries and everything in the bicycle line half usual prices. A few second-hand bicycles $5 to $8 to clear.
MEAD CYCLE CO. DEPT. C-83 CHICAGO

SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN - Keeping IN OIL
SPLASH OILING SYSTEM
Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear
OIL SUPPLY REPLENISHED ONLY ONCE A YEAR
DOUBLE GEARS — Each Carrying Half the Load
Every feature desirable in a windmill in the AUTO-OILED AERMOTOR
Gasoline Engines — Pumps — Tanks
Water Supply Goods — Steel Frame Saws
WRITE AERMOTOR CO. 2500 12TH ST., CHICAGO

SAVE 30%
Tried and True
BUCKSKIN TIRES
Buckskin Tires are made by skilled workmen of the same quality Para rubber and Sea Island fabric as those used in the highest-priced tires in the country. Guaranteed for 4000 miles. Privilege of examination at no expense to you. In making adjustments we pay express both ways. Remarkable offer to car owners detailed in free illustrated book. Send for it today—also price list.
THE L. AND M. RUBBER CO.
WOOD ST., .. Carrollton, O. 16
West. Dist. Office, 1436 S. Mich. Ave., Chicago

25c
WILL BRING YOU
Farm and Fireside 6 mos.
and Our New 32-Page War Atlas
THIS Atlas contains halftone portraits of the great military men of the warring countries; there are also pictures of President Wilson, Secretaries Baker and Daniels, and other prominent Americans. The newly developed instruments of warfare are all shown in pictures, many of them taken during action. The caterpillar tank, the great surprise of the war, is shown in operation, anti-aircraft guns, mines, trench mortars, periscopes, the Lewis machine gun, gas masks, contact mines, star-rockets, search lights, Zeppelins, all are pictured, while uniforms and equipment of the troops of various nations are shown in photographs taken at the front. Then there are maps of Europe, France, Turkey, Germany and all other countries involved, twelve page and double-page maps in all.
If your FARM AND FIRESIDE subscription is paid ahead, we will extend your time six months. In ordering be sure to say you want "The World's Greatest War Atlas."
Send your order to
FARM *and* FIRESIDE
SPRINGFIELD, OHIO

Live Stock

Careful Feeding of Horses

By M. N. Harrison

SOME persons feed much more to their horses than others, and get no more work done. Very often the horses fed the heaviest are not worked the hardest, and are not the fattest. One man told recently of changing his way of feeding, and he found that he got better results with a smaller amount of feed.

Feed is so high-priced now that this man found by cutting the amount of grain squarely in two that his horses have done as much field work as ever, and are in as good flesh as usual. His horses eat a little more hay than under the old plan of feeding.

There is such a thing as getting a horse accustomed to eating an exorbitant quantity of feed. The experienced horseman generally detects the symptoms of overfeeding, but a man who habitually feeds and handles only his own horses in his own way may go on for years with a method that is wasteful or even actually injurious to the horses.

Probably it is these differences of management that give some farmers the reputation for continually having bad luck, accidents, colic, and other trouble with their horses, while some of their neighbors never seem to have any unfortunate incidents about their horses. Many farms seldom have a horse sick, sore, or lame. It depends much on the management, and the most important single item is the sensible feeding.

When the Calf is Born

A FEW simple rules observed before and after birth will eliminate danger either to the cow or her offspring. The feeding of some concentrates—cottonseed meal, bran, or linseed meal—a few weeks before the cow is due to freshen is helpful both to the mother and her offspring. Dry feeding probably has clogged the eliminative organs—the bowels, the kidneys, and the skin.

To a great extent these concentrated feeds will correct this condition. Cottonseed meal should not be given to those cows that are exceptionally heavy milkers, because it increases the flow of milk and might cause milk fever. It is a good plan to give to heavy milkers a medium to small dose of Epsom salts—8 to 12 ounces dissolved in water—two to three days apart, just before the cow is expected to freshen. This will help keep down the congestion.

Exposure to cold, rains, and strong winds has the effect of driving the blood of the animal from the surface to the internal organs, which frequently results in diseases of various kinds.

The cow should be isolated a few days before the calf is expected. This will prevent any possible injury or worry either to her or her offspring. She should also be kept out of reach of hogs. At this period cows become cross, and they should be handled carefully in order to prevent danger to strangers or owners.

If a cow does not clean properly within ten or twelve hours, artificial means should be taken immediately, because the prolongation of this condition is likely to injure delicate organs and impair her as a breeding animal. If the membrane does not come with the calf or soon afterward, the cow should be given at least one pound of Epsom salts dissolved in lukewarm water. This is for a cow weighing 900 pounds. The dose must be increased according to the weight of the cow above 900 pounds.

Immediately after parturition a cow does not need heavy feeding. At this time she is feverish and her appetite is poor. She will eat food when put before her despite the fact that her digestive system has no use for it. This feeding will help to create more fever. Plenty of cool water should be given her, and after ten to fifteen hours feeding is in order. Feed should be gradually increased as the cow gains in strength.

Calves should be protected from the weather and insanitary surroundings.

The cow should be milked four to ten hours after calving. This will allow the calf plenty of the first milk. Subsequently the cow should be milked regularly.

To Keep Pigs Growing

KEEP the young pigs growing from the start. It is the pig's business during this time to develop a good frame, to grow bone, muscle, and vital organs, and to lay on fat. Plenty of pasture, some grain, exercise, and good sanitary quarters are all very necessary if the pig is to be both thrifty and profitable.

Give the pigs an abundance of good pasturage. They should be kept on pasture as long as possible and gain the benefit of its cheap nutrients, especially mineral and protein, and its tonic and digestive qualities. But pigs on pasturage alone, even alfalfa, need some grain supplement. The amount of grain or other concentrated feed used would depend on how much pasturage is available, on the cost factor of grain or other feeds, on the age and condition of the pigs, and the time at which the farmer expects to market them.

Less protein supplement is needed when pigs are run on leguminous pastures. Under most farm conditions the pigs will gain well on a one to two per cent grain ration. The self-feeding method makes for cheap and rapid gains. If the grain ration is limited, the hand-feeding method is better. By feeding once a day in the early evening, pigs take greater advantage of the pasture and graze hungrily during the cool of the morning or afternoon. Plenty of fresh, clean drinking water should always be available.

Pigs on pasture usually get enough exercise. They should have a clean, dry, well-ventilated shelter to guard against exposure to storms and to supply shade. A concrete wallow will add to the pigs' comfort, and a layer of oil on the water will keep down lice. Clean bedding also helps to keep away lice, as will an oiled sack on a rubbing post, or sprinkle the pigs with crude oil every two weeks.

Comfortable, shady resting places for stock during hot days are as necessary to profit-making as good feed

Rearing Percheron Horses

By H. J. Dawson

CONDITIONS in the Middle West are much like those in Perche, France, whence Percheron horses come. This opinion was expressed by Louis Aveline, one of the best known breeders of Percherons, now inspector for the purchase of war horses for the French army.

The crops in Illinois, Iowa, Kansas, and Nebraska are much the same as those of Perche, though the soil is heavier and climate more equable.

Mr. Aveline pointed out the differences between the breeding in France and in America. Each district there, he said, has its specialty, different types of horses being raised in different parts of the country. In Mr. Aveline's district, the stallions reared sell for export. The mares are on the small farms. A farmer with a 100-acre farm keeps five or six mares so that they will not work excessively. The selection of stallions is emphasized by Mr. Aveline.

"In the choice of stallions," he said, "we put less importance than the Americans upon weight. When you speak of a good horse here, you always say, 'How much does he weigh?' You will never hear that in France. If we have heavy Percherons, we produce them by selection, no more no less than to meet the demand of America.

The Best Family Counts

"We find that usually the bigger the horse the more lymphatic and the slower it is. A good horse of 16 hands is worth as much as a good horse of 17 hands. He certainly will not be so heavy, but he will be as strong because he will have the energy that the bigger horse will not have.

"In regard to the selection of a stallion I cannot insist too much on his line. The best horse does not always produce the best colts. But the best family of horses almost always gives the best results.

"It is true that if you breed small horses, such as I saw in Texas, Wyoming, and Montana, you will not find any market for them. But since the war has helped those ranchers to get rid of those small animals, let them now breed their mares to draft stallions, preferably Percheron horses. According to the opinion of many breeders, the Percheron horse is the best subject for crossing purposes, since the prepotency of the influence of its blood is a characteristic of its breed. The proof of this is that all other countries now want to imitate North America, for we sell Percherons to South America, Japan, and Russia. Even England this year has bought Percheron stallions and mares to export them to Great Britain.

"Last year—I intend this statement for those who believe that America produces as high a quality as Perche—an Italian commission came to this country to buy forty Percheron stallions. It took only six. This shows that you must not be content with using only your animals born and raised in this country, but you must continue to infuse imported blood.

Hold Fast to Best Mares

"Many advocates of horses bred in the United States base their judgment of the condition of the Percheron horse only on what they see at the shows, where are presented all the best selected and fatted animals. There are certainly some very good ones, but a show is not a place where you should judge the production of a big country. You must see it in the stockyards, as I have done for more than two years, and after I have bought more than 25,000 horses. There it will be easy for you to see the proportion of home-bred which are above the average.

"I saw with wonder a class of imported aged mares entered at the Chicago show. You will object that they were full-grown horses, having reached their mature age. I should like to know, when all the home-bred entered at this show will reach the mature age, five or six years, whether this class will be equivalent to the class of imported horses. I believe that I can say they will be far from it.

"There are, I repeat, a few types which could compete, but a very few. Then see the proportion of first-class horses that you produce in all the breeding industry of the United States. Of course I am speaking only of breeding horses. As to the work horses, I found them very good. I was even surprised to have such good horses, and I must confess that I bought lately on the St. Louis market some remarkable geldings and mares, some mares nearly as good as those of our own production. I was even jealous to see that they could produce such good animals outside of Perche and I blame the American farmers for getting rid of such mares."

E

Tractors at Fremont

[CONTINUED FROM PAGE 3]

supplies. We sold off six horses, and now run our farm with the tractor, one man besides ourselves, one team, and a few light horses for road work."

Considering the six million farms in the country, my previous estimate of 100,000 tractors bought this fall means just one for every 60 farms. I include the total number of farms because farm owners who already have tractors are even more likely to secure an addtional one than the average farmer is to make his first purchase. While 100,000 tractors may seem a large estimate, I am convinced that the proportion of 1 to 60 is thoroughly conservative. Between now and next spring fully that number of practical men will come to the same conclusion as the two brothers—namely, that the tractor saves man labor, horse labor, and money as well. I believe with these brothers that the best time to get a tractor is in the fall, so as to become acquainted with it, and you will be sure to have it when you need it in the spring. Most of the manufacturers I have talked with say that under present business conditions they need from one to three months to make delivery, but cannot guarantee a definite delivery date if the order is received after January 1st. No one can accurately predict business conditions next year.

These manufacturers are men whom I have known for several years and whom I have come to know not only at the demonstrations, but also in their factories, which I have visited. Compared with the establishments in which plows, harvesting machinery, and most other implements are made, tractor factories are small. We must remember it is a new industry. By ordering early, one is also able to protect himself against a rise in price.

Just which tractor is the best value for the money must depend on the work you require of it. After each had plowed its allotted land at Fremont, those working in the same field all lined up to plow out the headlands. Sometimes there would be twenty of them in line. It was a magnificent procession and a splendid opportunity to compare them. And yet I could not help noting the difference in their general usefulness when some of the tractors later pulled planters, cultivators, harrows, and disks over the land they had plowed.

The tractors receiving the greatest amount of attention had these qualities: Power of from six to eight good horses, medium weight, medium to small size, simple construction, and uniform flow of power from a quiet-running motor, also a hitch that would permit its use with most of the standard horse-drawn implements.

EDITOR'S NOTE: Persons who desire more compete information concerning the tractors shown at the Fremont demonstration, or who have any questions about tractors in general, are invited to write the Machinery Editor, FARM AND FIRESIDE, Springfield, Ohio. Your questions will be answered by personal letter.

Spring-Tooth Adjustment

By E. A. Wendt

THE common spring-tooth harrow occupies a very important place in crop production, as it is a much-used agent in preparing the seed bed. And many seed beds are only about half prepared because some of the harrow teeth become twisted out of true by working over rocks or roots. Or perhaps they warp to one side after being in use—from some inequality in the material or in its tempering—so that one tooth follows another instead of cutting its own way.

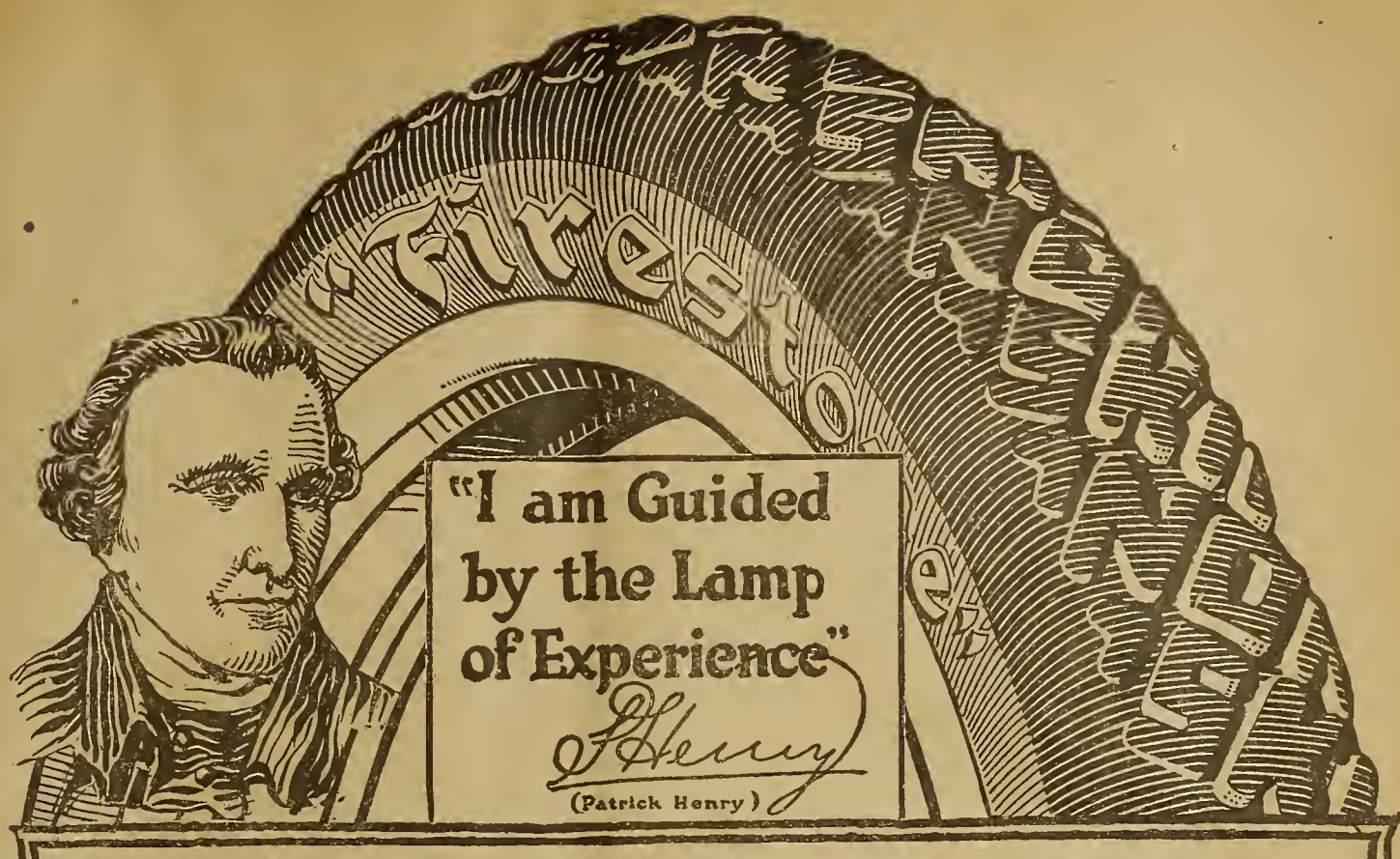
When three or four teeth in a section are twisted, three harrowings will not put the seed bed in as good condition as one in which every tooth is doing its allotted share.

A neighbor found his harrow had begun to leave such uncut spaces in his seed beds, and saw no remedy but a new implement, or at least eight new teeth. But knowing that I had had many hard-learned lessons and some early mechanical experience, he asked me to look it over.

I followed the harrow until I had located each warped tooth and had figured out how the peculiar twist of each could be made to fill in properly if changed to some other particular place in the implement. For instance, No. 1 might do good service if put in the place of No. 5, and No. 7 would do well in No. 1's place, while No. 5 would take the place of No. 7, and so on until each and every tooth was cutting its full share instead of loafing in behind another.

While this job cost my neighbor nothing, it would have been a good investment if it had cost him several dollars, for it greatly improved the quality of the work.

E W



WHEN Firestone puts his name on a tire it signifies that experience has proved the tire to be right. Constant invention and improvement on the part of the Firestone Organization have developed the rubber tire to the point where it does the best work possible, on all roads, under all conditions. Use on your car is all that is necessary to prove this.

When you know by experience that the Firestone tread gives a safe hold with extra miles of wear; when you know the body is of tremendous sustaining power; when you know the rubber gives easy riding, good traction and car protection, you will, naturally, stick to the tire equipment which bears the Firestone name. Your dealer and the nearest Firestone Branch unite to give you the maximum of prompt, economical service.

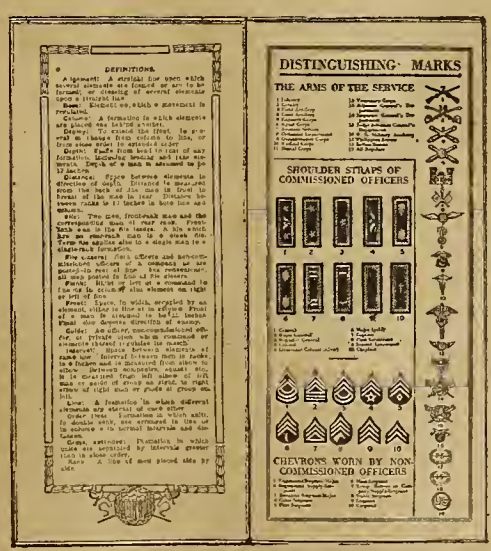
FIRESTONE TIRE & RUBBER CO., AKRON, O., BRANCHES and DEALERS EVERYWHERE

Firestone TIRES

The A B C of Military Training

A Book Every Man and Boy in America Should Have

It contains the rudiments of military instruction. Illustrations show insignia worn by commissioned officers, non-commissioned officers and the various branches of the service.



Here is a Partial List of Contents

The Citizen Soldier
Responsibility, Exercises, The Soldier as a Unit, The Squad, The Company, The Manual of Arms.

The Home Guard
Organization and Purpose.

Definition of Military Terms

Map Showing Officers' Reserve Camps and Districts

Organization and Administration of The United States Army
The Regular Army, The National Guard, The Reserves.

Branches of the Service
The Infantry, The Cavalry, The Field Artillery, The Coast Artillery.

The War Department
The Secretary of War, The General Staff, The Chief of Staff.

Field Service
Training, Discipline and Protection in Camp.
Training, Discipline and Protection on the March.
Training, Discipline and Protection in Battle.
Attacking a Position, Defending a Position.

Ranks and Grades in the Army

Insignia of the Army's Personnel

Map Showing Army Departments with Headquarters

Departments and Bureaus
The Adjutant General's Department, The Inspector General's Department, The Judge Advocate General's Department, Ordnance Department, Medical Corps, Quartermaster Corps, Engineer Corps, Signal Corps, Bureau of Insular Affairs, The Militia Bureau.

THE BOOK AND FARM AND FIRESIDE SIX MONTHS FOR 25c

Every reader of FARM AND FIRESIDE needs this little book. We should all have at least a working knowledge of military matters. Home Guard members will find here just the information they have been wanting. The book is written in a simple, direct manner. Technical terms are either avoided or clearly explained.

If you are already a subscriber to FARM AND FIRESIDE, we will extend your time six months from present expiration date

Get your neighbor to subscribe too. We are spreading a common-sense gospel of physical, moral and industrial cleanliness in FARM AND FIRESIDE, that merits your help and coöperation. May we have it.

CLIP THE COUPON—SEND IT TO-DAY TO

FARM AND FIRESIDE, Springfield, Ohio

Clip the Coupon

F.F. 113

FARM AND FIRESIDE,
Springfield, Ohio.

Enclosed find 25c for a copy of your *"Hand Book of The U. S. Army,"* and *SIX months* subscription { new / renewal } to FARM AND FIRESIDE for

.....
Name

.....
Post Office

.....
St. or R. D. State

The right is reserved to refund money of our stock of books is exhausted.

New hopes awaken in the hearts of two people, and better days dawn for a strange lamb in the city's great fold

The Sealed Room

A Girl Describes the Man She Would Like to Marry

By EDWIN BAIRD

PART III

THIS IS THE STORY OF THE EARLIER EVENTS: Tom McKay, a young stockman, comes to Chicago in quest of adventure and romance. Just as he is about to give up his plan in despair, he sees a beautiful girl with wistful eyes in front of a theater. He tries to talk to her, but a flashy young man comes up with a greeting that shows that she has been waiting for him. Later, Tom wanders into a Chinese restaurant, and is amazed to see the girl there inquiring for a friend called Dora. The Chinese waiter refuses to pay any attention to her. Tom takes the girl's part, and after a struggle with the Chinaman goes upstairs in search of Dora. There he finds a bald-headed little minister who tells him that Dora has been taken to the Mission for Friendless Girls. Arriving there they are met by the frantic matron, who announces that Dora has locked herself in her room. They rush up-stairs and find the room sealed.

GAS belched from the room in a stifling flood, and Tom dropped to the floor, dragging the girl and the little minister down beside him. "Lower your heads," he commanded, "and don't breathe deep." Then, cautiously, on hands and knees, he started across the threshold. "And don't follow me," he added.

In another moment he remembered something else. "That gas jet at the end of the hall, turn it out quick! And open all the windows you can find, wide!"

He crawled swiftly into the poisoned room, across the uncarpeted floor to a window which gave upon a fire escape.

The window was sealed with glue and rags, mute and tragic testimony to the careful preparation for death. Nauseated by the sickening fumes, he wrenched it open and leaned far out and breathed deeply of the warm night air.

Then, whirling, he surveyed the room in a hurried, sweeping glance. The rays of a corner arc lamp shone pitilessly athwart a cheap iron cot on which a motionless girl lay prone.

Two seconds more and he had her in his arms and was bearing her to the opened window. Climbing over the sill, he lifted her out upon the fire escape, and as he lowered her to the iron grating he heard the voice of Winifred (at least he knew her first name) call to him from the room:

"Is she alive? *Is* she?" The words were tremulous with grief and anxiety.

Tom, kneeling beside the slight, still form, laid his thumb to her pulse while loosening her waist at the throat. He looked up, his face very grave.

"I don't know," he said, and began pumping her arms back and forth as one who revives a drowning person. "I'm afraid not. But call an ambulance at once."

An hour later Tom was walking slowly through a quiet thoroughfare with Winifred Snow—he knew her *last* name now.

"It's a pretty name," he blurted out, and was promptly astounded at his temerity.

She, however, evinced no trace of confusion or self-consciousness. She looked up at him in a sidelong way, and her wistful blue eyes, smiling at him from beneath her wide-brimmed hat, proved once more disquieting.

"Do you think so, really? So many people joke about it. They say it sounds too cold."

Impulsively he thought to answer: "Nothing about *you* ever could be cold," but he said instead, conventionally enough: "Some people will joke about anything."

THEN she directed the talk into another channel, shyly, as if she feared to become too friendly with this stranger who had misjudged her enough to try to patch up an acquaintance with her on the street, and yet who had proved a friend in need so unexpectedly.

"I don't believe he meant to be impertinent," she thought, and then—

"D'you know," she said, "I'm so excited over Dora, and everything, I can't think straight. But I do want to thank you, more than I say say, for what you've done. You've been perfectly fine, and I—why, I almost owe you my life!"

To walk beside her and hear her utter such thoughts as these was enough to turn the head of a man less susceptible than Tom. And Tom was very susceptible. Ecstatic, exhilarated ineffably, he trod on air, as one in a glorious dream. Nor did he awake until he heard her say:

"Well, here we are. This is where I live. Thank you for walking home with me."

They stood in a populous street, before a huge brick house of faded grandeur, repellent in its unwashed aspect and air of slovenliness. Upon this structure Tom bent a disapproving eye, and became aware of a window sign announcing "FURNISHED ROOMS," and several men in shirt sleeves, lounging on the high front steps.

The girl inclined her head toward them, and, turning to Tom with a smile that was half amusement and half contempt, explained:

"My fellow lodgers."

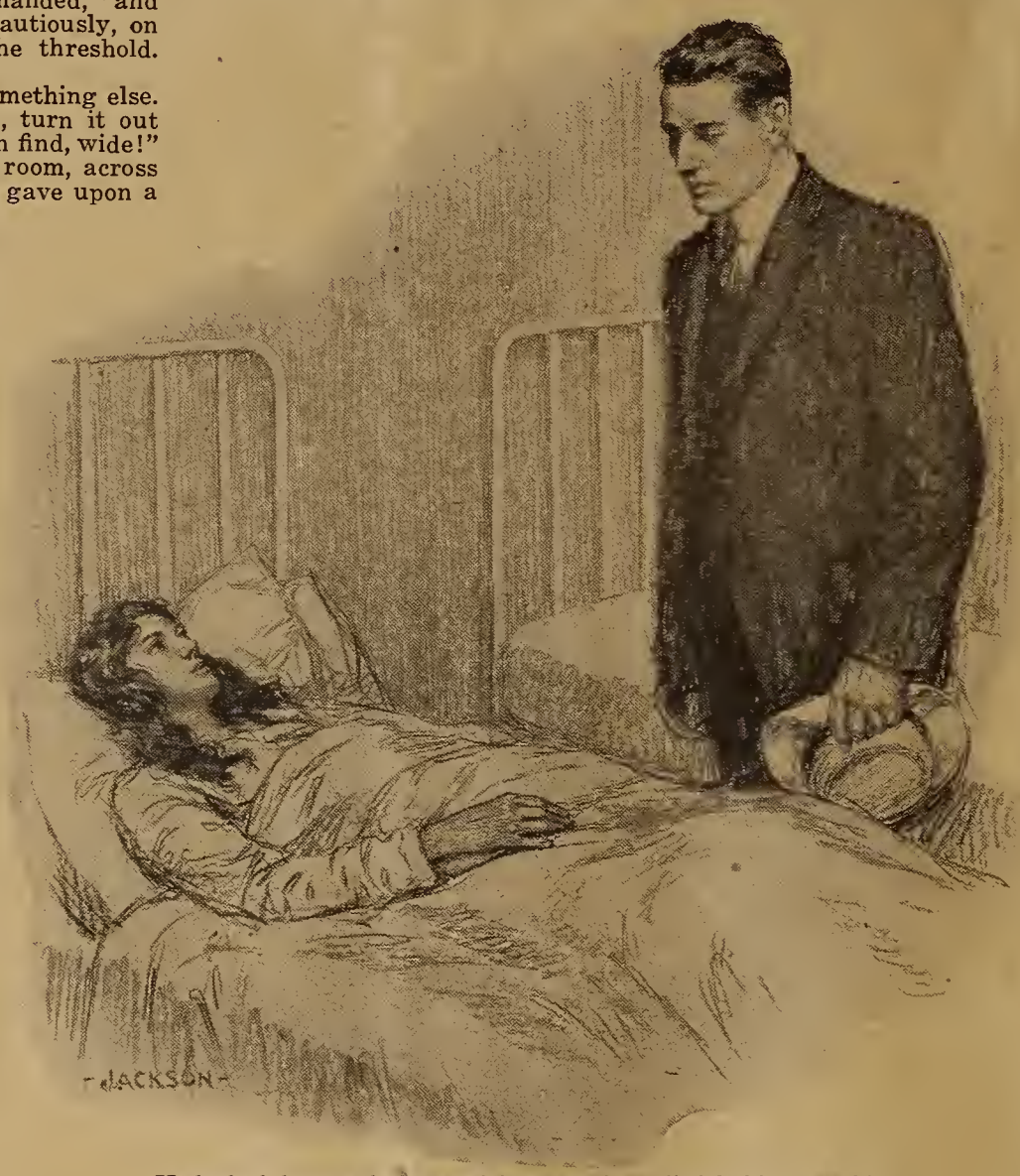
Tom viewed them with dislike.

"Tell me," he blundered, "I don't quite understand—why do you—a girl like you—I—I mean to say I don't see why a girl like you—" He paused in hopeless confusion. His tongue, not for the first time, had spoken his mind too hastily.

She, likewise, was embarrassed, and was grateful for the darkness which hid the hot flush in her cheeks.

"You mean to say you don't see why a girl like me should want to live in a shack like that?"

He looked at the "shack," and then at her, and particularly at her neat attire—lacy things and cool white linen—and nodded, still perplexed.



He looked down at her wasted face and she smiled feebly up at him

"I'm sorry I spoke, and I beg your pardon, but you see—"

"Oh, don't apologize. But if you were a girl, and worked in an office for nine dollars a week, maybe you'd understand. I'll have to go in now," she said, turning toward the steps, "and thank you again for all you've done for me—and Dora."

Stark panic throttled Tom McKay. He was losing her! Perhaps forever! The thought was terrifying.

He stepped after her, feeling like one submerged.

"Miss Snow—before you go—I—I'd like to give you my name and address. In case your friend—" he hurriedly added, "in case I could be of any help again."

He drew a card from one pocket, a pencil from another, employed both busily, gave the card to her, and bowed and withdrew.

He had gone three blocks before he remembered that he, in his agitation, had written on the card only the name of his hotel. It was considerably later before he discovered another mistake of importance: the card bore the name of Patrick J. Henneberry of the Broadway Motor Car Company.

"WELL, if you ain't the limit!" remarked Miss Plum, sitting up in bed and hugging her knees. "Honest, I don't see how you could 'a' done it, kid. Sure you ain't kiddin' me?"

Winifred, brushing her heavy blond hair before the crinkly mirror, indicated, without resentment, that she was not kidding.

"Well, you sure are the limit," repeated Miss Plum; and then, stretching her tired body beneath the sheet, she, like Oliver Twist, asked for more.

But Winifred had fully narrated the evening's episode half a dozen times or more, and had elaborated it and polished all details, and there was nothing more to tell. She said so. She also said she was tired, and all she wanted now was a glass of milk and her bath and bed. Besides, she was thinking now of another matter, upon which she did not care to dwell—unless persuaded to do so.

She did not mention that; but when two girls, of similar tastes and habits, share the same bed in a furnished room they become united by a sort of telepathy, requiring few words and no explanation. Miss Henrietta Plum, gazing sympathetically at her lovely room-mate, saw only her back, but she read her thoughts unerringly. She said in a gentler voice:

"Ain't it thrillin', Win, you meetin' 'im the *second* time? Jus' like a novel, wasn't it, Win? D'you s'pose you'll ever see 'im again?"

Winifred lowered the hairbrush and gazed at her reflection in the wavy mirror, and the deep blue eyes, gazing back at her, contained the same wistful look which first had attracted Tom McKay.

"I wonder," she murmured pensively, and picked up the card from the bureau, and read, for perhaps the fiftieth time, the printed words thereon. "If only he wasn't an auto agent! And if he only hadn't spoken to me at the theater! Why couldn't he be—something else?"

Again Miss Plum sat up in bed and clasped her knees with her thin arms, her pale gray eyes wide with astonishment. "Well, if you ain't the— What d'you want, anyway? A multimillionaire?"

"Auto agents," continued Winifred, "are so sporty, and I'm getting so I hate sporty men. I hate everything connected with the city, and I wish I'd never seen one! I wish I lived on a farm! . . . Still," she added, after a moment's reflection, "he didn't seem to be that sort at all, come to think of it. He seemed well-bred and kind of quiet. I wonder—"

"What'd he look like?" eagerly asked the enraptured Miss Plum.

"Oh—big? Big and bronzed, and athletic-looking. 'He's terribly strong—for an auto agent. He picked Dora up as if she was a baby, and carried her—"

"You've told me that, dear, seventy-'leven times. Maybe he ain't no auto man after all. Maybe that card he give you b'longs to somebody else."

Winifred's blue eyes lit with a sudden hope, which as suddenly died away.

"No," she sighed, braiding her hair in a thick yellow plait. "It's his, all right. He told me his name, and it was Irish. I don't remember just what, but it must have been Patrick J. Henneberry."

A little later, clad in a blue-flowered dressing robe, she pattered down the musty hall to the bathroom, and, later still, glowing rosily, she procured a bottle of milk from the window ledge, swallowed the contents, turned out the gas, and crept quietly into bed beside Henrietta.

For five minutes silence embraced the room. Then, softly: "Win!"

"Yes?"

"'Sleep?"

"No."

"Win, if it *should* happen he wasn't a auto man, what would you rather he'd be?"

A sudden and violent commotion in the bed denoted that Win, far from being sleepy, had turned on her other side in wide-awake animation.

"D'you know, I was just thinking of that very same thing! I was thinking that people who live in the country are the only ones who have any fun in this world. They're the only ones who get a square deal these days. What do you and I get out of life, living like beggars in a place like this, working for starvation wages—"

"Well, but what would you rather—"

"I wish he was a farmer!" said Winifred with indubitable emphasis. "And I wish he loved me, and wanted to marry me, and carry me back to his farm. But shucks! What's the use of wishing? You could tell by his clothes and the way he talked that he never saw a farm in his life, and wouldn't know a pig from a yearling heifer." With this she turned her face to the wall and shaped her thoughts for sleep.

While she is sleeping and dreaming of Tom, suppose we look in on him? The exciting events of the last few hours had left his mind in a chaotic swirl, which disregarded sleep. He had, of course, forgotten his train, now screaming across the western prairies. Thus we find him pacing his room, and thinking, always thinking, of *her*.

He thought of the things she had said to him as they strolled along together, and he wondered now, though he hadn't then, why she had said so little of Dora. Why hadn't she told him [CONTINUED ON PAGE 21]

EW

The Editor's Letter

[CONTINUED FROM PAGE 6]

institution to which the whole nation turns to-day for the moderation of the horrors of warfare.

Since then the society, small though it was until the outbreak of the war, has always been ready to render first aid in cases of flood and fire. The people of Galveston, of San Francisco, of Dayton, and Johnstown will bear witness to that.

The war has carried its activities across the world. In Roumania people are homeless and starving, living in tents and caves. Red Cross is sending a commission of trained experts to establish relief stations, and especially to help the people to help themselves in rebuilding their ruined homes and once more making the land fit for cultivation. In Russia a commission is tackling a similar problem. Two children out of every three die in France; the death rate there is 750,000 over the birth rate. To save France, it is not only necessary to defeat Germany, but to defeat the terrible mortality that is threatening her population. Red Cross experts in sanitation and child welfare are working on this problem.

TO CARE for the wounded and sick in camps and battlefields, and to do everything possible to conserve the health of those at home, so that our soldiers may be backed up by a strong and effective civilian population, is the tremendous task the American Red Cross has laid out for itself while the war lasts.

But the Red Cross is not a closed committee which sits afar off and works wonders by itself. It is a democratic organization, and in spirit, if not in fact, it includes every man, woman, and child in America. Three millions are now wearing the little button which signifies their membership; ten times as many should be wearing it. Every farmer and every farmer's wife in America ought to own a Red Cross button to signify that the possessor is doing his or her bit in the business of mercy.

There are three ways in which you may help the Red Cross: First, by sending in one dollar for your membership in the organization; second, by knitting and sewing for soldiers and fugitives; third, by making a contribution in money to the treasury.

In a Minnesota county 98 per cent of the farmers have pledged the proceeds of an acre of wheat to the cause. With the present prices of wheat this seems like a great contribution, but is it so great when you reflect that some day that contribution of an acre of wheat may save the life of *your own boy?* The farmer and his boys may do their share by offering their acre of grain or the proceeds from the sale of a pig or a calf to swell the treasury which every ounce of medicine supplied to the men across the ocean will help to deplete.

To the farm woman the Red Cross is looking for help in other more intimate ways. It is to you, Mrs. Farmer, that the headquarters in Washington are looking for the making of bandages, of hospital garments, of clothing for the homeless and dependent in France, in Russia, in Belgium, in Roumania, the knitting of sweaters and mufflers to help our soldiers and sailors through the bitter winter service.

YOUR club in the past has been devoted to social life only, perhaps, or you have been studying literature or history or home economics. Why not put aside these programs for this year at least and do your part by making your society a Red Cross auxiliary?

America is not going to win the war by simply announcing that she is prepared to send a million men across the Atlantic. We shall have to fight for victory, and the fight must be backed up by the co-operation of every man and woman at home.

"Farm women, as a rule, are better sewers and have had more practice at it than the average city woman," one of the executives in the Red Cross headquarters said the other day. "That is why we are so anxious to enlist them in our volunteer army."

Thousands of men and women to-day are giving up their ambitions, their fortunes, their lives for the cause for which the United States and the allied nations are struggling. If you believe in them and in your country and the merciful work of the Red Cross, and are willing to do what you can to help, go to the nearest chapter of the society and ask them for work.

Or if there is no chapter in your village, write to me, and I will tell you how you can do your part.

Editor

Looking Your Best

Much Depends upon the Appearance of Your Teeth

By MARGARET DRUMMOND

NO MATTER how beautiful you may be, no matter how perfect the beauty of your mouth, all that beauty counts for nothing if, when you smile, you show irregular or badly kept teeth.

Nature has endowed each one of us with a full set of teeth which are meant to last and be perfect for a lifetime. That they very rarely do so is our own fault.

Every tooth is provided with a shield of enamel, an intensely hard substance which protects the real body of the tooth from the attack of harmful germs which are introduced into the mouth in our food. Now, all sugary or starchy foods, if allowed to remain in the little crevices of the teeth, cause acid fermentation, which in turn produces millions of tiny germs which feed on the teeth. First of all, they eat away the enamel, and then they burrow into the body of the tooth itself until the pulp is exposed. Then comes toothache, which is often the first indication that you have not been giving your mouth the care it deserves. Many visits to the dentist's office may check the trouble, but nothing can contradict the fact that your teeth are never again in the perfect condition they might have been in had you been careful to keep them clean and paid a little attention to diet.

One of the best dentists in the country recommends the following rules for preserving and whitening the teeth: The chief thing is absolute cleanliness. The teeth should be brushed after each meal. If this is not possible, then morning and night without fail. He advises rinsing the mouth with soda and water or lime water three or four times a week. This counteracts the acid fermentation which destroys the enamel. Always do this after eating very acid fruit or candy, as candy quickly ferments in the mouth.

IN BRUSHING the teeth, the brush should be held across the teeth and at the top of the gums of the upper jaw. The bristles should be drawn down to the bottom of the teeth, following the spaces between. The lower jaw is then treated by beginning at the gums and drawing the brush up toward the top. In this way the teeth are cleaned and all particles removed between them. Be sure that every tooth is scrubbed. Then take the brush and go over them all once more, working this time with a circular motion so that no particle is left. Rinse the mouth with water, and the work is done.

Even with great care there is sometimes a slight accumulation of tartar, so every week you must give the teeth a treatment especially to remove this. It is easily and quickly done standing in front of a mirror. Take an orangewood stick and twist a piece of absorbent cotton around the top. Dip this into lemon juice and then into powdered pumice stone and rub the teeth. The discolored parts will very soon disappear. When the operation is over, rinse the mouth with a glass of warm water that has a teaspoonful of soda dissolved in it. The soda will neutralize the effect of the lemon. Another homely but very good way to remove the tartar is to scrub the teeth once or twice a week with common table salt, wetting it thoroughly before using. The care of the teeth should begin in early childhood—only in this way can your teeth be preserved, and early habits usually last through life.

Our teeth are given us to bite and chew with. They require constant polishing on dense, hard foods if they are to keep clean and healthy. Raw apples, brown bread, beans, nuts, and even sugar are great tooth preservers, because they polish the teeth clean and require great chewing. The act of chewing hard promotes the flow of saliva in the mouth, and this saliva is Nature's means of providing beneficial germs which fight the harmful tooth-destroying germs introduced from the outside.

A dentist recommends that a piece of dry toast and an apple be eaten after each meal. He says that the dry toast scrapes from the teeth any sugar or starch that may be clinging there, and the acid of the apple helps to destroy any harmful germs left in the mouth. In any case, no matter what the meal may consist of, the teeth must be brushed directly afterward.

Children should be taught to brush their teeth from the time when they are able to hold a baby toothbrush, and the admonition to "eat your bread crusts or you will never grow big like Papa and Mama," while not strictly true, will do a lot toward making the teeth of the growing child strong, white, and healthy.

There are many good dentifrices on the market, and a very good if homely one is ordinary table salt, used wet on the brush. This should not be used oftener than three times a week.

Remember that nothing expresses more gratitude for attention than your teeth.

To Remove a Scar

E. S., FLORIDA—A little carbolated vaseline rubbed in every night will help to remove the little scar on your nose, but it will take time. Do not be discouraged, but keep up the treatment. Keep the pores of your nose thoroughly clean by washing with warm water and soap every night. In the morning use lukewarm water, dry carefully, rubbing with an upward motion always.

To Protect the Hands

L. N., NEW JERSEY—When doing housework wear rubber gloves as much as possible, but do not keep them on too long, as they have a tendency to draw the hands. Before starting any work in which the nails are likely to become stained, rub the nails lightly over a cake of soap. This soap can easily be pressed out or removed with a nail-brush when the work is done. All stains should be removed at once, either with the skin of raw tomato, lemon juice, or, in the case of ink stains, with the fumes of a burning match. When it has been necessary to keep the hands in water for some time, rub them with vinegar to relieve the puckered-up feeling.

Eyebrows and Eyelashes

R. C., NEW YORK—To shape your eyebrows and make them glossy, brush them every night and morning with an eyebrow brush (a fine toothbrush may be used). If they are inclined to be thin, rub vaseline into them before using the brush, but be very careful not to get any of it into the eyes. For a tonic the following mixture is very good: One ounce of vaseline, eight drops of oil of lavender, eight drops of oil of bergamot, mixed well. Brush a few drops into the eyebrows and lashes every night before retiring. In using this tonic, as well as the vaseline, particular pains must be taken not to allow any of it to get into the eyes, as it is likely to cause inflammation.

To Remove Deep Lines

U. T. D., MASSACHUSETTS—Massaging with the finger tips, using a good cold cream, is the best remedy for the deep frown lines between the eyes. At the same time contract the habit of smiling so that the frown line does not show. That is the best way to get rid of it. In massaging be careful to use a very light touch, as hard rubbing will not help the lines and will hurt the tissues.

To Take Off Tan

O. B. L., OHIO—Bathe the face in buttermilk, allowing it to dry on. Repeat this for several nights. If the tan is very bad, use a little diluted lemon juice instead of the buttermilk.

The Right Weight

R. I. S., INDIANA—You are a little too heavy. About 132 pounds is the correct weight for your height. You ought to look well in dark blue, green, or pink.

A Cold Cream

L. S., OKLAHOMA—I can give you the name of a good toilet cream only on receipt of a stamped self-addressed envelope, since we do not publish names or addresses of manufacturers in this column.

Coffee Drinkers

who are

RUN DOWN

usually

PICK UP

after they change to the delicious, pure food-drink—

POSTUM

"There's a Reason"

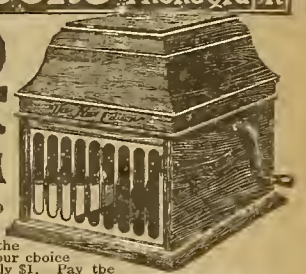
SILK HOSE FREE

Try our hosiery before selling it. We want you to become familiar with our hosiery line. A hosiery proposition that beats them all. Write quick for particulars if you mean business, and state size of hose worn.

THOMAS MFG. CO.
5346 Elk St. Dayton, Ohio

Mr. Edison's Wonderful Phonograph

Only $1.00 After Free Trial



Yes, you may keep this new Edison—Thomas A. Edison's great phonograph with the diamond stylus—and your choice of records, too, for only $1. Pay the balance at rate of only a few cents a day. Try the New Edison in your own home before you decide to buy. Send no money down. Entertain your friends with your favorite records.

Write Today For Our New Edison Book. Send your name and address for our new book and pictures of the New Edison phonographs. No obligations.

F. K. BABSON, *Edison Phonograph Distributors*
4036 Edison Block Chicago, Illinois

Lucas VELVO-TONE FINISH
For All Woodwork and Furniture.
Stains, varnishes and produces the beautiful hand-rubbed effect in One Operation.

Who Wants A Bicycle?

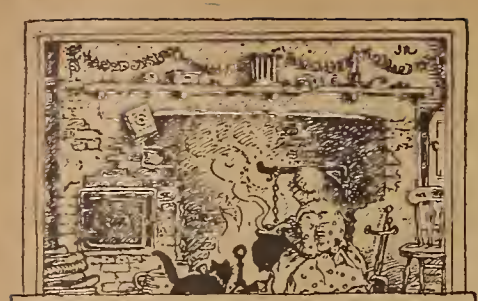
I have one for any boy or girl who is willing to do a little easy work in spare time.

Models for Girls or Boys of All Ages

Parents—Read This!

If you would like your boy or girl to have a high-grade bicycle, here is an opportunity you must not miss. The bicycle will be given absolutely free of cost. This is not a contest. You will be told exactly what is necessary in the first letter. Isn't it worth investigating? Address

Secretary "The Bicycle Club"
FARM AND FIRESIDE, Springfield, O.



Housewife's Club

Kitchen Patriotism

By Ruth M. Boyle

"MY SON and two of my nephews have enlisted. My daughters are making surgical dressings for the Red Cross. I am kept so busy at home that I can't be of any use, and it is hard to have to go on from day to day just as if there wasn't a great war that we have to win. Yet there doesn't seem to be anything that I can do to help."

She was a farmer's wife, and she was managing a home for six hard-working, healthy people. She didn't realize it, but her part in winning the war was probably as important as that of the son who had enlisted and the girls who were making surgical dressings.

This is the way a woman—a home economics expert—who is giving her time and her talent to the Government to find means of conserving the food which is so necessary and so scarce in the world just now, explained it to me:

"War," she said, "depends on wealth. Now, there isn't any wealth except that which comes out of the woods, out of the sea, out of the mines, and off the farms. So you see the fate of the world hangs on the farm, the farmer, and the farmer's wife—and not the least is the farmer's wife. It is the woman of the house who plans what is to be eaten. If she plans well, our own country and the men at the front can be fed."

No woman can think for a moment of the lads—most of them just in their twenties, remember that—"somewhere" at the front, and not feel impelled to starve herself, if necessary, in order that they may have plenty. But no such sacrifice as that is necessary. What does the nation ask you to do?

A few simple things—to save wheat, to save meat, to save butter, to use perishable fruits and vegetables as far as possible in order to conserve those that can be shipped long distances.

This does not mean that you must not give your family all they need; in order to keep them in proper health, they must have plenty of wholesome food. But it does mean substituting corn and other grains for wheat, which is needed across the sea. It means using cheese and fish and all possible substitutes for meat. It means that although you may use butter as usual for the table, you must not use it in cooking. Above all, it means the elimination of waste. There should be nothing left on the plates, and the leftovers should be served at another meal.

Plan your meals with the needs of your country in mind, and you are serving your country as truly as any soldier in the trenches. And then it may be some consolation to you, when you think of your own boy "somewhere" under the colors, to know that you with thousands of other women are using your skill and your wits in order that he may be well provided for.

For Dainty Waists

By Nina C. Hall

WHEN starching tea aprons, thin waists, and very fine dresses, never use boiled starch, but dissolve one teaspoonful of common gelatin in one quart of boiling water, strain, and stiffen your dainty fabrics. You will find it far superior to starch.

Tomatoes for Winter Cooking

By U. S. Work

CANS are costly, time is short, and garden stuff is abundant—but perishable; then why not bottle tomato paste instead of canning all your crop of tomatoes? Tomato paste is a concentrated form, available for use in soups, sauces, and in combination with beans, macaroni, and spaghetti. The advantage of this concentrated form when jars are scarce is clear—any odd bottles can be used for the paste, corked, and sealed with sealing wax.

To make it, use one quart of thick strained tomato pulp, one slice of onion, four tablespoonfuls of chopped sweet red pepper pulp or one teaspoonful of paprika, one-half teaspoonful of salt, one teaspoonful of sugar, one tablespoonful of mixed spices. Cook spices tied in bag with tomato pulp in a pan over boiling water for about three hours, or until the paste is thick enough to hold the shape of a spoon when tested by dipping out a spoonful. Bottle hot in freshly scalded bottles, cork, and seal. The sealing can be easily managed if the cork is forced down below the edge of the neck and the top sealed over with sealing wax or paraffin.

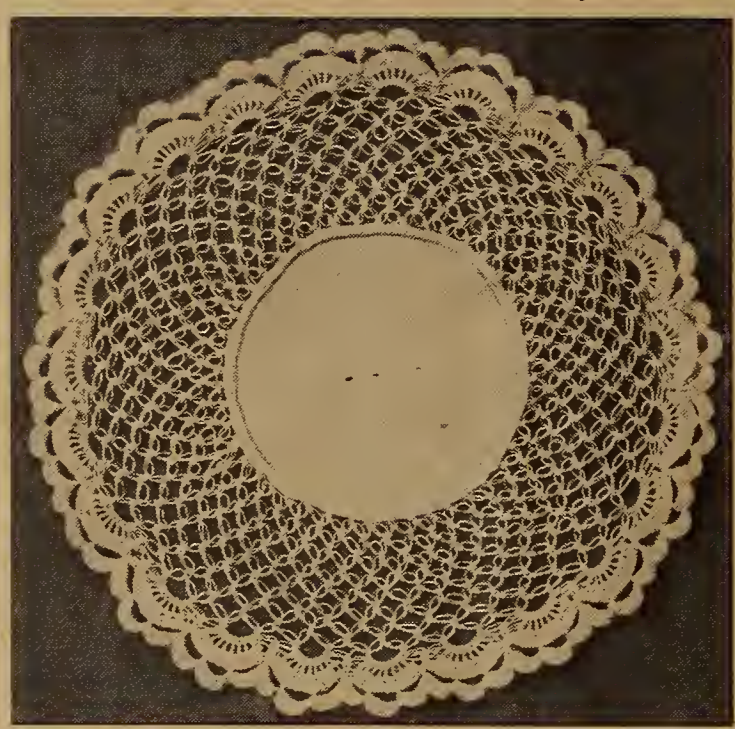
A Hemstitching Discovery

By Emma G. Wallace

IN THE natural wear and tear of use and laundry, hemstitching frequently breaks at the outer edge where the strain comes and the hemstitched portion is less strong than the fabric on either side of it.

A teacher of household arts noticing this declared that she always instructed her classes to draw the threads up to but not through the selvage edge and, if the selvage was lacking, to leave four or five threads of the goods at the extreme outer edge to serve as a special reinforcement against strain. This suggestion was followed out and found to be practical and successful.

Lover's Knot Doily



THE laciness of this doily is its chief charm. It is quickly made, and is very effective if worked out in a luncheon set. Complete directions for making will be sent upon receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

Everyday Helps

A LEMON HINT—If lemons are slightly heated before the juice is squeezed out of them you will have almost twice as much juice as otherwise.

L. C. A., Illinois.

REMOVING PERSPIRATION STAINS—Stains left from perspiration may be removed by soaking the garment in strong salt water before washing.

N. E., Ohio.

BRIGHT BRASS KNOBS—When brass knobs on bedsteads become tarnished, remove them and boil them in vinegar. Wipe dry with a flannel cloth and they will be as bright as when new.

L. M. T., New York.

TO COOL PUDDINGS AND SAUCES QUICKLY—Into a large bowl filled with cold water drop a handful of salt and the same of soda, and stand the dish containing the pudding or the sauce in the prepared water. They will cool in one third the time usually required.

G. C. L., Maine.

TO WHITEN CONCRETE—Concrete and stone steps and walks that have become discolored and dingy may be whitened and made to look clean by scrubbing with the following mixture: To a gallon of warm water add a quart of lime, a handful of salt, and a cupful of baking soda. Mix well and scrub the surface with a broom or brush dipped in this solution.

M. A., Indiana.

Pickling and Preserving

By Helen A. Lyman

PICKLE RELISH—Fifteen red peppers, fifteen green peppers, ten onions, one large bunch of celery, put all through large meat chopper, cover with boiling water and let stand for a few minutes. Then drain and add three quarts of vinegar, two cupfuls of sugar, four level tablespoonfuls of salt. Cook over a slow fire fifteen minutes after it begins to boil, stirring often. This is a very well liked recipe.

GRAPE CATSUP—Five pounds of grapes, mashed, stewed, and rubbed through a strainer. To this add one pint of vinegar, three pounds of sugar, one tablespoonful of ground allspice, one tablespoonful of ground cloves, cinnamon, and black pepper, and one-half teaspoonful of salt. Boil all together until thickened.

GREEN TOMATO MINCE-MEAT—Chop four quarts of green tomatoes, drain off juice, cover with cold water, and bring to a boil, scalding for thirty minutes, then drain. Repeat till parboiled three times, then add two pounds of brown sugar, one-half pound of chopped citron, one pound of seedless raisins, one-half cupful of choped suet, one tablespoonful of salt, one-half cupful of vinegar, mix, and cook until thick. When cold, add one teaspoonful each of ground cinnamon and cloves, and one tablespoonful of ground nutmeg. Mix well, and keep in cool place.

CHILI SAUCE—Twenty-five medium-sized tomatoes, six red peppers, five small onions, one-fourth pound of brown sugar, four and one-half teaspoonfuls each of ginger, cloves, and allspice, one quart of vinegar, two heaping teaspoonfuls of salt. Put spices in a bag. Boil two hours.

CARROT JAM—Wash and scrape or peel large carrots, cut into inch pieces, and weigh. To three pounds of carrots allow three pounds of sugar, six large lemons, and two ounces of blanched almonds cut into strips. Steam the carrots until tender, and press through a sieve. Add the grated yellow rind and strained juice of the lemons, the sugar and shredded almonds, and heat slowly. Simmer for twenty minutes, stirring very often, then put in jars.

TOMATO FAVORITE—One peck of red tomatoes, four onions chopped fine, two tablespoonfuls of cinnamon and cloves, one small teaspoonful of red pepper, one-third cupful of salt, one pint of sugar. Boil four hours. When done, add one quart of vinegar, boil five minutes, then bottle for use. One peck makes eight bottles.

SPICED GRAPES—Prepare the grapes as for preserving, by removing the skins, boiling the pulp, and straining out the seeds. To seven pounds of fruit add a cupful of vinegar, a cupful of grape juice, taken from the grapes used for preserves, two ounces of cinnamon, one ounce of cloves, three and one-half pounds of sugar. Tie spices in a bag so they can be removed. Boil until it becomes thick like marmalade, which will take about an hour and one-half. When done turn into glasses.

BEAN KRAUT—Take ten pounds of string beans, well matured, one pound of salt, and a small bunch of summer savory. Wash the beans well, remove the strings, cut the pods diagonally across, and throw them into cold water. Lift the beans from the water and, without draining, pack them in stone jars with alternate layers of salt. Sprinkle each layer with summer savory. The salt may be slightly moistened before it is added. Unless sufficient brine is developed to cover the beans within thirty-six hours, add weak salt water to the pickle. Weight the beans by covering them with a cloth and a large inverted plate on which is placed a clean heavy stone. The beans must be watched so that the cloth may be removed and washed whenever necessary.

To cook the beans, lift them from the brine, rinse them off, cover them well with boiling water, and boil them for at least five hours, or boil them thirty minutes and cook them overnight in the fireless cooker. If one-fourth pound of lean salt pork is cooked with a quart of the beans an excellent meat substitute is provided. The beans can also be used as a salad after cooking.

To Scale Fish

MANY persons despise to scale fish, and not without good reason, but if the following method is once tried all will be delighted with it and never return to the old way: Put the fish in a large dish where it will lay flat, and pour boiling water over it, quickly take it out and plunge it into cold water. With a little rubbing the scales will now come off easily.

Peel Potatoes Economically

DROP the washed potatoes in a vessel of rapidly boiling water and allow them to remain ten minutes. Remove, and strip the thin skin as when potatoes are peeled after thorough cooking by boiling. The potatoes will still be practically raw and may be handled like raw peeled potatoes in preparing any dish. as scalloped, French or German fried potatoes, potato chips, etc.

One excellent way to cook the skinned potatoes is to bake them. The entire potato, including the thin golden-brown crust, may be eaten.

A Trick in Cooky-Making

By Jane E. Clemmens

EVERY cook knows that to be good, cooky dough must be handled very lightly and as little as possible. But many of us have found that there are some cooky doughs that positively refuse to be coaxed into shape without a great deal of handling and kneading. An excellent way is to stir your ingredients in a mixing bowl with a granite spoon, and when ready to roll spread the bread cloth or other clean white cloth over the kneading board; dredge thickly with flour and drop your dough upon this from the spoon. Flour your rolling pin, pat the dough into shape with the spoon, dredge lightly with flour, and roll out. By this little trick your cakes are ready for the oven and you have not soiled your hands or ruined your cookies.

Codfish Balls

ONE pint of raw sliced potatoes, one-half cupful of salt fish, one egg, one tablespoonful of milk, three tablespoonsful of drippings, salt and pepper to taste. Pick the bones from the fish, and let soak two hours in water, changing the water twice. Cut the fish and slice the potatoes together, and boil slowly until the potatoes are tender. Mash, or run through food chopper, add seasoning, drippings, milk, and a well-beaten egg, mixing thoroughly. Drop the mixture from a tablespoon into hot fat and fry.

The Sealed Room

[CONTINUED FROM PAGE 18]

who Dora was? Why hadn't she explained how she happened to know such a girl, and why she was so concerned about her? Why had she made such a mystery of the thing? And what did all this signify?

He shrank from naming the obvious answer, even to himself; and yet it lay coiled in the back of his mind, as poisonous as a cobra and, ready to spring and devour him, contributed no little to his sleeplessness.

Once, in his restless striding to and fro, he was stung by a poignant regret that he had come to Chicago—or, having come, that he had encountered her. If he hadn't met her he would be sleeping now, instead of suffering this torment. As matters stood—well, here he was insanely in love with a girl whom he scarcely knew, of whose existence he was unaware eight hours ago, and who, if indications augured aright, could never become his wife.

"And even if she could," he savagely muttered, "she probably wouldn't."

Strangely, this thought eased his turmoil and, calmed somewhat, he threw away his cigar and began undressing.

FINALLY he went to bed. And his last conscious thought, before he slipped into a troubled sleep, was this:

"It doesn't matter to me *what* she is. I'll quit worrying about her. She may be straight, or she may not—*but she wouldn't marry a farmer, anyway.*"

The next morning after leaving the hotel he paused irresolute, striving to conquer the impulse to go forthwith to her home.

A taxicab chauffeur, eying him speculatively, neatly solved the problem.

"Taxi, sir?"

"Yes," said Tom, and gave him her address.

He was received at the rooming house by Mrs. Peter Stookey, the landlady.

"Miss Snow," said she in response to his question, "lift airly this ma-arnin' for the horspital. And your name now," she added, surveying him with quickening interest, "isn't ut Pathrick Henneberry?"

"No. It's Tom McKay."

"*Is* ut now?" said Mrs. Stookey, patently disappointed. "Well, well! Thin ye're not the young man what saved the life of Dora Kirk lasht night."

"I suppose I helped a little," said Tom, turning to go, "but Winifred—Miss Snow—did a great deal more than I."

The motherly eyes of Mrs. Stookey, following him down the precipitous stairs, expressed a bewilderment too profound for words.

But Tom was hurrying back to the taxi, his mind intent on one thing alone, and so he failed to perceive the perplexity he had occasioned.

"Where to, boss?" asked the chauffeur.

"County hospital," said Tom, jumping in and slamming the door.

They reached their destination too late. Winifred, Tom was told in the superintendent's office, had departed five minutes ago.

He immediately thought of following her, and then, recognizing the difficulty here—for none knew where she had gone, it seemed,—he asked if he might speak to Miss Dora Kirk, who, the doctor said, was "recovering nicely."

HIS request was granted, an attendant was told to conduct him to her ward, and presently stood beside her cot in a long, white room of many such cots, in which the air hung heavy with the smell of drugs, and where white-gowned nurses moved silently about their duties. He looked down into her wasted face, and when she smiled feebly up at him with apologetic friendliness, a sharp compassion surged within him. Her unnaturally large eyes and chalk-white skin made him think, somehow, of a dank weed grown in a sunless spot. He pitied her from the depths of his heart.

"I dunno how to thank you, Mr. Henneberry—" she began, in a thin little voice.

"Please don't try," he interrupted. "Everything's all right now, I hope. But why do you call me Henneberry? It's not my name, although you're the second person to-day to think so."

Her sunken eyes widened in puzzled surprise. Her lips parted questioningly.

"Why, that's funny. Win said—Who *are* you, then, if you ain't Mr. Henneberry?"

He told her his name and his occupation, and while she was marveling at this disclosure he asked concerning herself.

"Course you'll want to know," she answered "[illegible] Win come to hook up with a [illegible] me—"

[CONTINUED ON PAGE 22]

Success with Poultry

Little Stories of Profits from Various Fowls

By WOMEN READERS

From Loss to Profit

By Ida E. Bloye

THREE years ago I was in a poultry rut. I had been brought up on a farm and my parents worked the farm, fed and cared for the stock on it, poultry included, about the same as did their fathers before them. Consequently the poultry was the mongrel kind found on most farms, and was housed in a cold, drafty hen house into which the snow blew freely. The flock was given any kind of grain we happened to have on hand, and seldom received water. The hens never laid in winter and in the summer only from March until July. When I started to keep poultry, I began in the same way, but soon concluded it was not a very profitable way.

It was the farm and poultry papers that helped me to get out of the rut. I found that poultry needed a balanced ration, plenty of clean water, and a dry hen house with no drafts. So I began by making the hen house warm and dry, and I fed a balanced ration. The morning meal was a dry-mash mixture with about one part to eight beef scrap in it. Also a little whole grain was fed in the litter. At noon I fed plenty of green stuff, and for the night feed I gave them a mixture of whole grains. At all times they had plenty of clean fresh water, oyster shell, and grit. I culled out the poor layers twice a year, and finally sold all my mongrel poultry. As a result I now have nothing but pure-breds.

I am well pleased over the change, for my chickens are now profitable and lay most of the year since I changed my way of taking care of them.

Pigeon Farm Making Good

By J. T. Raymond

HIGH cost of grain is not disturbing the large squab producers. Feed for a pair of breeders costs under Atlantic Coast States conditions $1.50 to $1.75 a year. The cost is somewhat less in the West. The large pigeon farms, however, are getting the highest squab prices in their history, market returns of $6 a dozen being frequent. These farms average six to nine pairs of squabs annually for every pair of breeders kept.

Large squab farms have passed the experimental stage and are a proved success. Equipment, feed, labor, and selling costs are accurately calculated. The larger the flock the larger the profit, with pigeons.

On a farm under the writer's observation, carrying about 2,000 pairs of breeders, all labor is done by one man on six days of the week. On Monday half a dozen hands help him to kill squabs and pack them for market. Produced within half a mile of an Atlantic tidewater, these squabs go direct to the Chicago hotel where consumed. Thus the farm reaps the additional profit which is ordinarily the middleman's. Hens are kept on this farm, but they are not nearly as profitable as the pigeons.

Most of the costs in squab-raising decrease as the plant grows in size. Pens and flyways for 100 pairs of breeders cost at 1917 prices about $1 for each pair kept. Pens should be 10x12 feet in size.

In a plant for several hundred breeders, building costs are lower, getting down to 75 cents a pair under favorable conditions.

Inside equipment consists of nests, nest bowls, perches, fountains, and feeding trays. Nest bowls cost $15 to $20 a gross. Perches cost $5 a hundred. Two-gallon water fountains cost around $1 each. Nests are simply "pigeon holes," a foot square and a foot deep, and two of these are allowed for each pair of breeders. Their cost and the cost of the home-made feeding tray are determined by labor and lumber prices. Eight years is often figured as the average life of a pair of breeders.

Large pigeon farms depend on market squabs for the bulk of their profits. There is, however, a considerable demand for breeding stock, bringing from $2 to $5 a pair.

Goose War-Measure Fowl

By Emma H. Johnson

DURING a recent journey through the South I found geese more in evidence on farms than in States farther north. Flocks of a score or two, and even up to one hundred of young and old geese, could be seen almost any day getting the greater part of their living from pasture fields and harvested grain fields. Where cotton is grown it is now not unusual to find some geese being kept in the cotton fields for the purpose of eating the young weeds as they appear.

There is an active market for both young and old geese at the holiday season, and also when Jewish holidays occur. Well-grown geese will now sell to special customers for about $3 each and, considering the cheapness with which they are kept, they are even more profitable than other kinds of poultry as a meat-producing fowl.

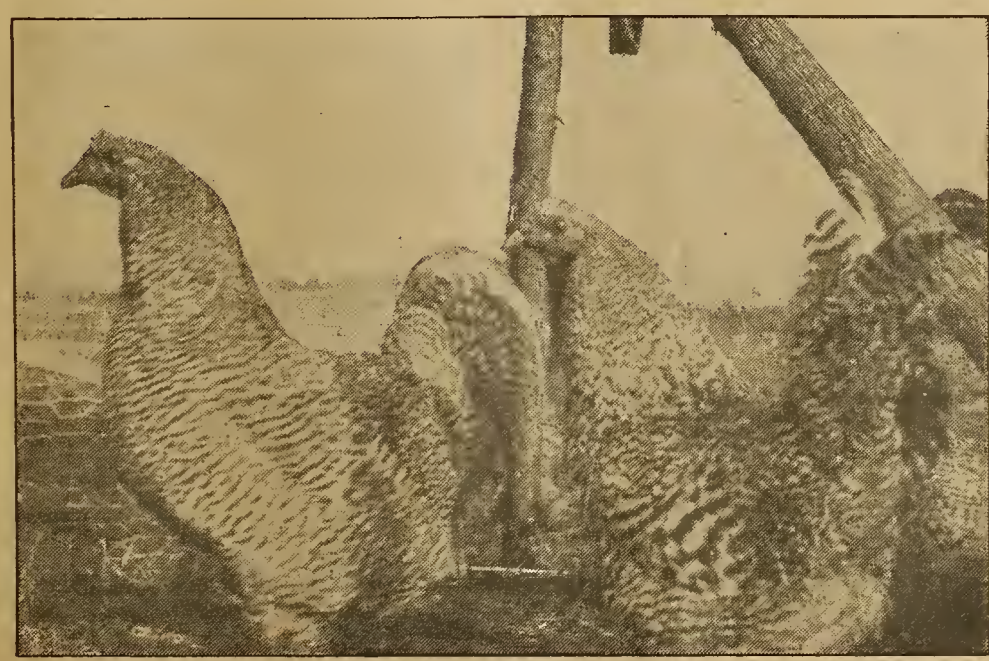
Geese are also inexpensively wintered, as they can be kept largely on good quality of clover, alfalfa, or roughage, and will make good use of cabbage, stock beets, and silage, or any waste vegetables. Why not plan systematically now to increase our geese population next year?

Try Some Capons

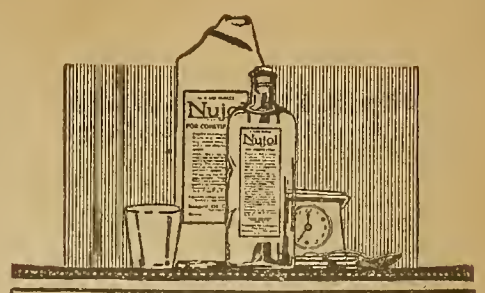
By Bertha Thornton

THERE is now need of making every pound of feed do its utmost to produce the best results in our poultry operations for the good of the world as well as our own profit. Every young cockerel raised to roasting age requires almost double the food to produce a pound of gain (after reaching the crowing stage) as does the capon of same age. Furthermore, the capon when well developed commands at least 10 cents a pound more than the cockerel when sold to those who are in the market for the highest grade of poultry. It is not too much to say that caponizing cockerels can be made to add from 25 to 50 cents of additional profit to every male bird of the larger breeds raised to the age of six or seven months.

The operation is no longer difficult to a painstaking poultryman with the improved implements now in use. By this operation we can add much valuable food to the present short meat supply by selling less broilers and friers, which are mostly a luxury, and raising more capons, which can forage for a considerable part of their living.



At present prices a pair of capons like these are worth a $5 bill, or $30 a dozen



Nervous and Irritable?

HEADACHES, and you feel half sick?

Don't make a bad matter worse by loading your system up with drugs, pills and poisons that at best give only temporary relief. Remove the cause. Get rid of constipation—and most of your troubles will go with it. Keep a bottle of Nujol on hand and don't let your system get clogged.

Nujol lubricates the bowel walls and keeps the bowel contents soft. Nujol makes functioning easy without distress—valuable in cases of piles. Nujol is water white, tasteless and odorless and easy to take. Particularly suitable for nursing or delicate mothers and children.

Nujol is not a drug, is not babit formiog, does not upset the stomach, is effective wben constipatioo is chronic or in its incipiency, does not lose its efficicocy, does not gripe.

Send for our booklet on Nujol and its uses.

Nujol is a distinctive product developed after prolonged experimenting. There is none just like it. Refuse imitations.

Nujol is sold in pint bottles only tbat are filled and sealed at the Nujol laboratory — never sold in bulk.

Nujol *for constipation*

STANDARD OIL COMPANY
(New Jersey)

MOTHERS in EXPECTATION
Send To-day for "Mater Modes" showing a complete line of fashionable apparel for
MATERNITY
Dresses, Suits, Blouses, Skirts, Corsets, at MANUFACTURERS' PRICES.
For Free Book Write Dept. Z 3 Lane Bryant 5th Ave. at 38th St., N. Y.

LEPAGE'S GLUE
HANDY BOTTLES
WHEN A NAIL WON'T DO 10¢

GET THIS SUIT

made to your own measure. It won't cost you one single cent. We will give it to you so you can show it to your friends. It will be a big advertisement for us. You can easily make from

$35 to $50 EXTRA Every Week

and besides that be the best dressed man in your town. It's an opportunity you cannot afford to overlook. Even if you only want to order a suit for yourself, don't fail to

Write For Our Big Offer

Don't delay a minute. Drop us a line or send us your name on a postcard, and we will send you absolutely free, our wonderful style book, containing 64 beautiful samples to choose from. Write now.

The Progress Tailoring Co., Dept. 878 Chicago

YEAR TO PAY
No Money In Advance

Hartman's great offer brings you the famous "Hercules" Brand of

ROOFING

Not a cent in advance—30 days' free trial and a year to pay.

Most durable, most economical Roofing and easiest to put on. No outside help required. You can put it on yourself. Only a hammer and pair of shears required. We furnish all necessary nails and binding cement and give full directions. Your choice of felt, flint surfaced, mica surfaced, composite. A protection against fire. Every roll backed by the guarantee of a $12,000,000 house.

Get full descriptions and prices of the famous "Hercules" Roofing before you pay out a penny. Free samples sent also.

PAY NOTHING FOR 60 DAYS

If you keep the Roofing make first payment in 60 days. Balance in equal payments every 60 days.

Samples and Catalog

Send today for Free Roofing aod Paint Catalog, also for Roofing Samples and Paint Color Cards. Tells all about "Hercules" Roofiog and gives the most reasonable prices and easiest terms on all kinds of Roofing and Paints. Send name and address today on Post Card. Remember we ask no money in advance.

The Hartman Co.
4039 LaSalle St. Dept. 892 Chicago

The Sealed Room

[CONTINUED FROM PAGE 21]

Dreading to hear what she might say, even as he had recoiled last night, he hastily interposed:

"No, no! Never mind. Please! I'd rather not"

But she went steadily ahead, paying no heed to his demurring.

"Well, it was like this: Me and Win roomed at Mrs. Stookey's, and she was all right, and I wasn't. She's the straightest girl ever was. With me it was dif'runt. I always been weak and easy led, and I wasn't makin' much, anyway—six dollars a week in a department store.

"Well, I went down, and all my pals ditched me 'cept good old Win. She's true blue, that girl—what you call a thoroughbred. She stuck by me through thick and thin, and did her level best to get me to come back. But it wasn't no good. Well, last night I decided to kick off, and I sent her a note by a kid, hintin' at what I maybe was gonna do.

"She got the note just as she was startin' to a show to meet a young fellow named Bartzen. He used to be her steady, but he ain't no more. She's canned 'im for good. She told me so herself to-day. Well, she met 'im at the theater, and tol' 'im what was up and ast 'im if he wouldn't— But say! I guess you know the rest, don'tcha?"

Tom nodded in happy affirmation. His mind was lilting joyously, ecstatically, and had been singing thus since the second sentence in her strange recital. When he felt he could control his voice he asked gently:

"And you? What's to become of you when you leave this place?"

She shrugged indifferently, making a wry grimmace.

"Who cares?" she said. "*I* don't."

He leaned nearer and laid his great hand on hers—a thin, pathetic little thing, as white, almost, as the coverlet on which it lay.

"*I* care, Dora; and so does Winifred. Please remember that. Also remember," he added, looking deep into her wondering eyes, "you're going to get well and be happy again—happier, perhaps, than you've ever been before. I'm planning a big surprise for you, Dora. I'll tell you all about it pretty soon. Meanwhile, good-by and the best of luck!" He pressed her hand reassuringly, and turned and hurried from the room.

He made no further attempt that day to see the girl he loved. Instead, he caught the next train for home.

YOCUM met him at the railway station, his face an interrogation mark of consuming curiosity.

"Howdy, boss? I sorter been worried aboutcha. How'd 'The Trimmed Lamp' burn?"

"Trimly," chuckled Tom, buoyantly entering the waiting automobile. "She sure was trimmed to a mighty fine point, and her light shone so bright—But that's all I can tell you now, old scout. Later, maybe, I'll tell you more."

Yocum's curiosity, thus stimulated, was not assuaged as they motored through the ripening countryside—a fat and mellow countryside, stretching afar in the June sunshine—for Tom, though clearly merry, was uncommunicative.

The thing didn't end there, either. When they came abreast of Adolph Zuckerman's farmhouse Tom stopped the car, sprang to the ground, and hurried back to the kitchen garden, where Mrs. Zuckerman was gathering peas for supper. Yocum, sitting alone and deserted in the front seat of the motor car, saw them conversing earnestly, and knew, by the way her sunbonnet moved, that Mrs. Zuckerman heard important tidings, and gradually his curiosity acquired an irritable edge.

He resented this sort of thing, and no wonder. It wasn't fair. He had worked faithfully for Tom McKay for seven years, and they long since had ceased to regard each other as employer and employee. They regarded each other as brothers, and now at last, for the first time, a secret had dared to come between them. And why, in the name of common sense, was he telling this secret to Mrs. Zuckerman? What had *she* ever done for him?

Yocum, glaring beneath the brim of his weather-beaten hat at the two animated figures in the garden, began to mumble beneath his breath. Presently, when Tom returned, rejoicing, to the car, he grumbled above it:

"'Tain't right, that's all—this here mysterious carryin'-on. You never acted this way before. What's happened to you, anyhow?"

Tom's hand fell with rough affection on the other's shoulder.

"Don't get peevish, George, old scout. I'll tell you everything—when the right time comes."

When they reached home, Tom went forthwith to the telephone, and Yocum, following leisurely, heard him make a long-distance call.

The foreman fought a brief battle with his conscience, for the desire to eavesdrop was overwhelming, and then, his instinctive honesty winning the fight, he strode from the house and busied himself around the stable.

He was grooming a dapple-gray mare, and taking slight interest in this employment, when a shout from the direction of the house caused him to look that way. Tom came running toward him, his face alight with triumphant joy.

"She's coming!" he yelled when eighty feet away. "Next week!"

"Who's comin'?" queried Yocum, abating his activities with brush and currycomb.

"Dora," said Tom, now but ten feet away. "Dora Kirk—"

"Who's Dora Kirk? Who is she, and where is she?"

"At the present moment," Tom explained, recovering his breath and equipoise, "she's in the county hospital in Chicago. I just called up the hospital on the long distance and asked the man to please find out if she wanted to come and live in the country—and, say, she's plumb crazy about it! Wanted to start right away, and would have too, if—"

"Is she comin' to this ranch?" interrupted Yocum, a note of alarm in his voice.

"Of course not, idiot! She's going to the Zuckermans'. You know how they've always wanted children, and how she's often told us that since the Lord wouldn't give her a child of her own her next best wish was to raise some other woman's kid, preferably a city youngster, in God's great outdoors.

"AND that," continued Tom, smiling genially, "was the topic of our conversation a few minutes ago—that and Dora. She sure was enraptured with the idea. Wanted to start straight for Chicago and bring the kid home with her, and nurse her back to health and all. She said she wanted to adopt her—legally, you understand—and raise her as she would her own flesh and blood.

"It'll be a great thing for Dora, too. The poor kid's never had a chance to live straight—no home to speak of, and living in cheap rooming houses like a half-starved alley cat, and so far's I know she hasn't a relative on earth—"

Again Yocum interrupted.

"Where'd you meet this Dora?" he asked, "and how'd you meet her? You ain't explained that yet."

Tom walked over and sat on an upturned barrel, and revolved the whole matter in his mind before speaking. And then, somewhat haltingly at first, he narrated his adventures in Chicago, beginning from the moment he had first strolled from his hotel in quest of romance, and ending with his dash, a few hours ago, for the home-bound train.

"And now," he concluded, looking at his watch, "I'm going to take the 4:50 back to Chicago and ask Winifred if she'll marry me."

[CONCLUDED IN THE NEXT ISSUE]

Autumn Models

For Home Dressmakers

THE woman who sews at home knows the necessity of using good patterns that help save material and work. FARM AND FIRESIDE supplies just this sort of pattern, sending by first-class mail.

When every minute is precious, the schoolgirl and her mother both appreciate this sort of dress. It buttons down the front and is so easy to slip on and off. No. 3247 — Girl's One-Piece Dress. Sizes 8 to 14 years. Material for 12 years, four yards of thirty-inch. Pattern, fourteen cents

The small boy will keep as snug and warm as can be in this belted little coat, and a cap may be made to go with it too. In back the belt draws it in slightly. No. 3284—Child's Coat with Hat. Sizes 6 months, 1, 2, and 4 years. Pattern, fourteen cents

No. 3298

No. 3342

No. 3342

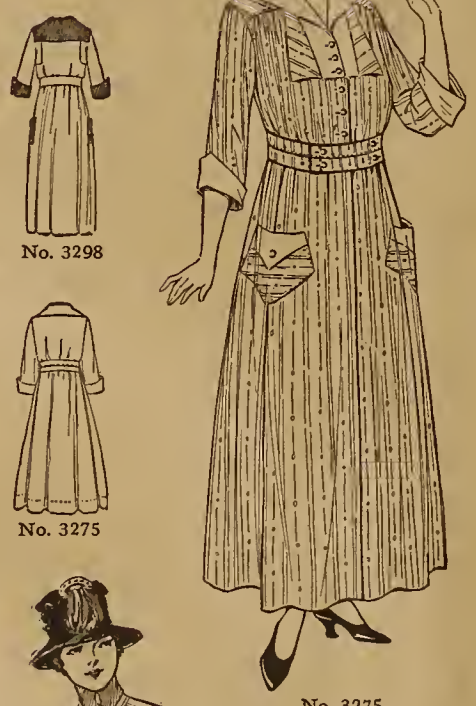
No. 3297

No. 3297

Suited for the girl at high-school or college age is No. 3342—Plaited Dress, Deep Yoke. 14, 16, 18, and 20 years. Width, three yards. Pattern, twenty cents

No. 3298—Dress with Novelty Sleeves and Large Pockets. 34 to 44 bust. Width of skirt, two and one-fourth yards. Price of this pattern, twenty cents

No. 3297—Dress with Deep Pointed Collar (including transfer pattern for braided panel). 34 to 42 bust. Width of skirt, two and three-fourths yards. Price of pattern, twenty-five cents



No. 3275

No. 3243

No. 3243

No. 3243 with long sleeves

No. 3353

No. 3354

A house dress that always looks presentable and yet is comfortable and easy to work in. No. 3275—Dress with Vest and Collar in one. 34 to 46 bust. Width, two and one-fourth yards. Pattern, fourteen cents

A splendid dress for the stout woman is No. 3243—Box-Plaited Dress with Sleeves in Two Styles. 36 to 50 bust. Width of skirt, two and three-fourths yards. Suitable for cloth, cotton, or silk. Pattern, twenty-five cents

No. 3353 — Blouse with Adaptable Collar and Vest Sections in One. 34 to 42 bust. Collar may be worn high or low. The price of this pattern is fourteen cents

No. 3354—Gathered Skirt with Inverted Plaits at Sides. 24 to 32 waist. Width, two and three-fourths yards. Note the smart side plastrons. Pattern, fourteen cents

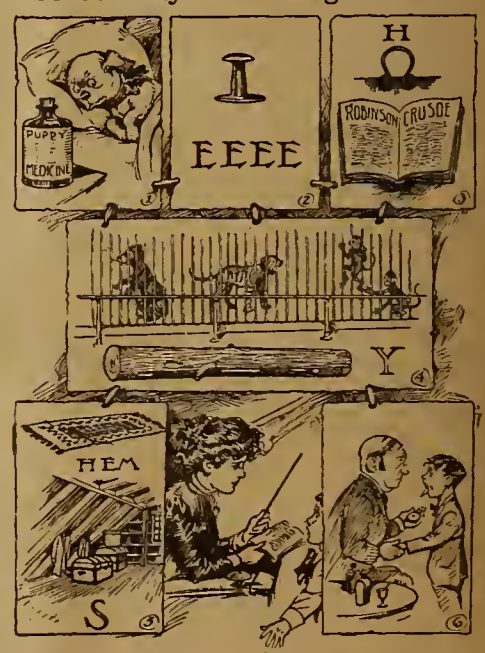
PATTERNS may be ordered from Pattern Department, FARM AND FIRESIDE, Springfield, Ohio. Enclose correct remittance with number and name of pattern.

Watch for the fall outfit to be shown in the next issue of FARM AND FIRESIDE. These clothes, which will be bought for you, include dresses, hats, and many attractive fall garments.

Copyright, 1917, by The Crowell Publishing Company

New Puzzles

School Days Have Begun Rebus



Each of these pictures represents something you do or see in school. Can you tell from your school days what they stand for?

Answers to Puzzles

Puzzles Printed Last Issue

The Elephant Express

The traveler must have been 24 miles from Calcutta.

E-W

MAXWELL

Most Miles per Gallon - Most Miles on Tires

A Good Investment—
The Maxwell Motor Car

"Webster" says: *"Investment: the laying out of money in the purchase of property, especially a source of income or profit."*

We maintain that that definition exactly fits the purchase of a Maxwell.

American industries have hundreds of millions of dollars invested in labor saving devices.

That's what the automobile is today—a saver of human energy and time.

And, friends, energy and time are *you*—are *your* life.

Can you afford to waste time and energy when you can run a Maxwell for $2 a week?

You can drive a Maxwell 5,000 miles a year at a cost of $2 a week.

This is not a theory.

Scores of thousands of Maxwell owners are doing it.

In our great economy contest on May 23rd, last, 1,092 Maxwells averaged 27.15 miles on a gallon of gasoline each.

In our great economy contest in June and July last, 2,040 Maxwells averaged 29.04 on one gallon each.

The Maxwell engine holds the world endurance record—22,022 miles without stopping.

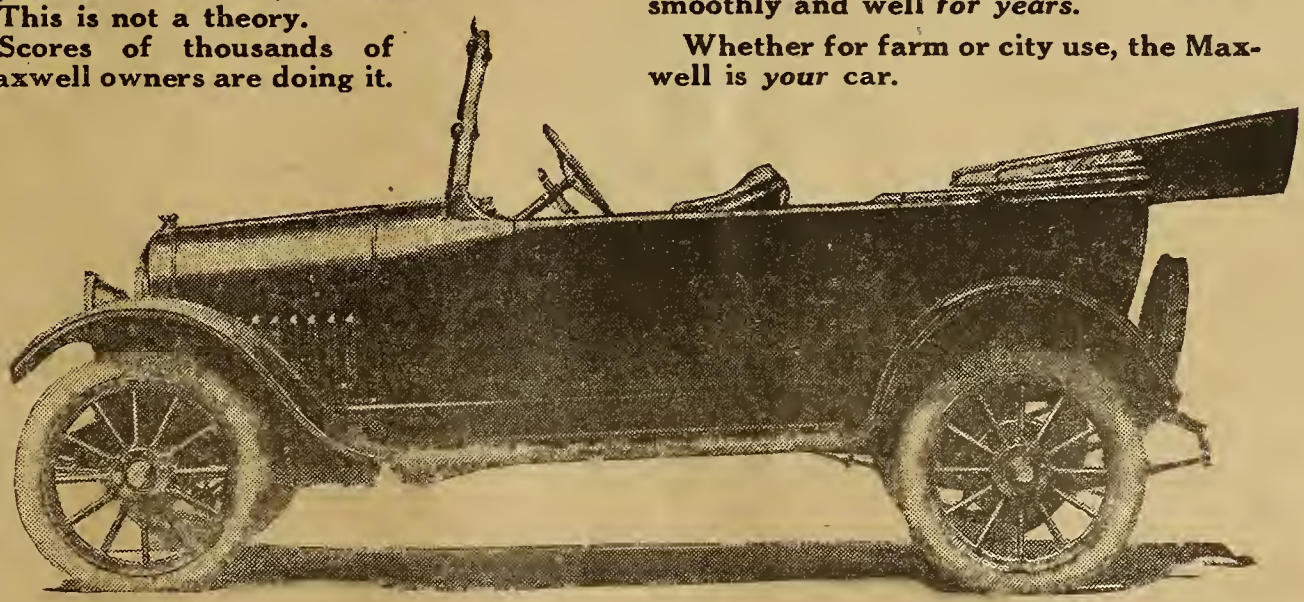
The Maxwell clutch runs in oil—is wear-proof, smooth, efficient.

Maxwell transmission is simple, trouble-proof.

The mighty Maxwell axles stand the strain of the road.

Every vital part is built to do its work smoothly and well *for years.*

Whether for farm or city use, the Maxwell is *your* car.



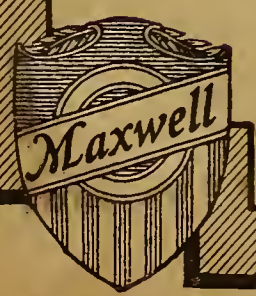
Touring Car $745

Roadster $745; Berline $1095
Sedan $1095. All prices f. o. b. Detroit

Write Today for Catalog

Maxwell

Motor Sales Corporation
Detroit Michigan



Powerful
As Five Horses
Costs Less Than Four Horses

Here is the kind of a tractor you've been looking for—one that not only plows, but does ALL farm work that horses can do, besides supplying power for belt work. Not a big, heavy, cumbersome tractor, that plows while your horses loaf and eat, then leaves the rest of the work for your horses to finish; but a tractor that does EVERY job a horse can do—does it better—faster—easier and cheaper.

It costs less than four horses, yet it plows 4 to 12 acres a day; pulls two 14-inch bottoms; harrows, discs, plants and CULTIVATES corn or other hill and row crops—16 to 20 acres a day. It is as powerful as five horses and does the work of seven horses; easy to drive as a team—a REAL ONE-MAN TRACTOR and the only tractor that does all farm work without horses. It is so inexpensive to buy and operate that even 80-acre renters can profitably use the

MOLINE ORIGINAL 2 WHEEL UNIVERSAL TRACTOR

Note the big advantage of its two-wheel construction—ALL ITS WEIGHT IS TRACTION WEIGHT. ALL its weight goes into the PULL. That's why we can build it lighter—why we eliminate almost a ton of excess dead weight necessary on tractors of the three and four-wheel types. Then notice how handily it is hooked to the tool you use—the plow—harrow—cultivator—mower—binder, etc. Notice how you operate both tractor and implement from the implement seat. All your work is plainly in view. No craning or straining of your neck looking back to watch the farm tools—no extra man needed. Easy to back up with tool attached; easy to make quick and short turns; to work close to fences; to do all work as well and as easy as with a team.

No matter what size farm you own, if you have 80 acres or more, here is the tractor for you. If your farm is extra large, two MOLINE-UNIVERSAL Tractors will be cheaper than *either* horses or one large tractor. Write for our free catalog-folder which tells all about this all-work, all-purpose, low-cost, one-man tractor. See for yourself how it will solve the power and hired help problems on your farm.

MOLINE PLOW COMPANY Dept. 60 Moline, Ill.

The Moline Line Includes: Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows (Chilled and Steel), Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons, also Stephens Six Automobiles

(10)

HARVESTING

DISCING

PLOWING

DRILLING

MOWING

EW

More Than 600,000 Copies Each Issue

U. S. Department of Agriculture

FARM and FIRESIDE

The National Farm Paper - Twice a Month

ESTABLISHED 1877

5 cents a copy

Saturday, September 15, 1917

Eastern Edition

PHOTOGRAPH BY JOHN KABEL

Winners on Parade

Smith Form-a-Truck $350

Every Step You Can take *to* Save Money -Increase Crops - *is* helping the Nation

MAKE every dollar of expense for farm equipment pay you a profit. Get interest on every cent you spend. You can make a big start toward increasing your profits by using Smith Form-a-Truck to do all your farm hauling.

One Smith Form-a-Truck will displace four horses and do the same work they do—do it faster and at from 50% to 70% less cost in dollars and cents.

Farm reports prove that one horse requires the crops from five acres of land for feed—one Smith Form-a-Truck will save you the crop of twenty acres of land.

And one driver, with Smith Form-a-Truck, will do the same work as two drivers, each handling a two-horse team. Here is a big labor saving.

You can drive a Smith Form-a-Truck anywhere you can drive horses and our famous 8-in-1 Convertible Farm Body gives you any type of body you could ever require, with change from any one type to any other in a minute.

Buy your Smith Form-a-Truck on time

Your Credit is good with us.

$1.00 a day for attachment alone

$2.00 a day for attachment and Power Plant

WITHOUT chattel mortgages—without any reflection on your credit—we will sell you a Smith Form-a-Truck on such easy terms that it will pay for itself out of the money it actually saves you and leave a good profit over and above its cost to you.

This is the best proposition that has ever been put up to you—and it is a real business proposition that will help you do the work you should do to make every dollar count—every one do its full quota of work.

You need a Smith Form-a-Truck just as thousands of other farmers have needed it—and have bought it to add to the productive value of their farms.

Your own Government reports will show how expensive horses are—and today the cost is much higher than when the last reports were issued.

Write for details of our Easy Payment Plan. Get full information regarding the biggest co-operation that has ever been extended to you.

Smith Motor Truck Corporation
Michigan Avenue at 16th Street CHICAGO, ILL.

F&F-9-15-17
Smith Motor Truck Corporation
Michigan Avenue at 16th Street
Chicago, Ill.

Gentlemen:
Please send me full details of your Deferred Payment Plan. Also send me complete descriptive literature of Smith Form-a-Truck and your 8-in-1 Convertible Farm Body.

Name.....
P. O. Address.....
Town.....
State.....

FARM and FIRESIDE

Published Twice a Month by THE CROWELL PUBLISHING COMPANY, Springfield, Ohio
Copyright 1917 by The Crowell Publishing Company
Vol. 40 Springfield, Ohio, Saturday, September 15, 1917 No. 24

Holsteins for Western Plains

Dakota Breeders Using Federal Aid Develop High-Producing Herds

By W. C. PALMER

DEVELOPING a strain of Holsteins for the Western plains is under way in Morton County, North Dakota. The North Dakota Experiment Station, the U. S. Department of Agriculture, and fifteen farmers are co-operating in this work. The station and the Department are represented by a field man who visits each herd once a month. He secures copies of milk sheets, amounts of feeds used, tests the milk, and makes suggestions as to feeding, management, care, or any other matter that needs attention. At the end of the year he makes a report on each cow of each herd in the circuit.

The first report brought many surprises. Some cows gave as much as three dollars' worth of cream for each dollar's worth of food consumed, while others gave as little as 70 cents' worth. It put the cows on a business basis. A weeding-out process began and the boarder cows had to go. The milk scale and the Babcock test sealed the doom of the unprofitable cow and gave proper credit to the good ones. Keeping records of individual cows is the best means of taking the element of chance out of the dairy business.

The poorest cows were soon weeded out, and the best blood lines are now represented in all the herds, some of which have doubled in yield

The testing circuit has already demonstrated that it pays to use the best methods in dairying, that weeding out poor cows results in increasing returns, often with less labor and expense.

Start with Common Cows

THE work was started primarily so that large numbers of pure-bred cattle could be secured as a basis for a breeding experiment, with the hopes that a superior strain might develop. History shows that most breeds and special types have been developed in a district where a good many animals of a particular kind have been bred. This is brought out by the fact that most of the breeds bear geographical names, and these are often county names, as the name "shire" in so many of the English breeds indicates.

The farmers in Morton County had been dairying for a number of years, had organized co-operative creameries, and had made a success of them. The New Salem Co-operative Creamery, named after one of the towns in the county, has run twenty-two years without a single interruption. These farmers started with just common cows, but after a few years of fair success they decided that it was time further to improve their conditions. The buttermakers suggested that the herds be improved by the use of pure-bred sires of a milking strain. After careful consideration all agreed to improve the herds by using sires of the Holstein breed.

A number of patrons of the creameries formed a breeders' club and purchased a carload of Holsteins from Wisconsin and Minnesota. Each one also secured a few pure-bred heifers. The first shipment consisted of some twenty-odd head, and as the investment was, at the time, a new venture, no one was sure of success. But they were willing to take the risk. It turned out well, however; the stock was good and the climate, feed, and pasture agreed with the stock remarkably well from the beginning.

The matter of starting a breeding circuit was discussed in 1909 and met with favor from the start. Each member was to begin with a Holstein bull and three Holstein cows. This necessitated buying more pure-bred Holsteins, and they were selected with a good deal of care. The good judgment used in making the selection is indicated by the fine records that have been made by animals closely related to those selected, some of which now hold world's records.

The representatives of the North Dakota Experiment Station and the U. S. Department of Agriculture were given a good deal of power, so that they could introduce the quality of stock and combine the blood lines as they thought best.

The Holsteins in the circuit include some of the best blood lines in the breed. One of the bulls carries three eighths of the blood of the world's champion cow, which produced 1,205.6 pounds of butterfat in a year. This bull is now twelve years old and is in service on the circuit. Another bull is a half-brother of a four-year-old world's champion cow with a record of 1,111.56 pounds butterfat in a year. The blood of these two sires, together with that of other notable bulls, constitutes the principal lines of heredity in most of the herds in the circuit.

An adaptation from the Holstein Advanced Registry requirement has been worked out as a means of measuring the progress made. It is a stronger requirement than the Advanced Registry Standard, as the time is restricted to the calendar year instead of any 365 days. The Holstein-Friesian Advanced Registry requires 250.5 pounds of butterfat for a two-year-old cow and one tenth of a pound for each additional day of age until five years old. At this age and over a production of at least 360 pounds of butterfat is required. In 1916, 40 per cent of the cows in the circuit had exceeded the standard.

The effect of better care, feed, and breeding is well illustrated by the increase in butterfat production. For one herd the average per cow was 132 pounds for 1910, 140¾ for 1911, 189½ for 1912, 211½ for 1913, 282½ for 1914, 292 for 1915, and 427½ for 1916. Observe that the production was more than tripled.

How much of the improvement to credit to feed, care, and breeding, respectively, is a question which puzzles the investigators, but the owners of the cows are chiefly concerned with the gross results, which, as you see, have been satisfying.

The demand for this new strain of Holsteins is greater than the supply. Shipments have been made to many points in North Dakota and adjoining States. Numerous excursion crowds have come to Morton County from the surrounding districts to see how these progressive dairymen carry on their business. The fine cattle, the barns, the silos, the milking machines, the alfalfa, the creameries, are all items of interest.

Every year the circuit holds a picnic which combines business with a good social time

More Silos and Modern Barns

NOR do the local banks have to send away from home for money as do banks in many grain-growing sections. The dairy farmers have paid for their farms and equipment and have money in the bank.

The members of the breeding circuit at first were not so sure about the value of weighing the milk and feed, of saving samples for testing, about sanitation, ventilation, and light. But it soon became apparent that these things resulted in increased returns; now they are regarded as essential. Many of the dairymen have lately put up barns with the most modern improvements. Silos have been found indispensable for economical feeding.

The state and federal governments have laid a good foundation for effective breeding work in the detailed and classified records covering over seven years' time. And the farmers have profited through the increased returns and the increased value of their live stock through careful selection and breeding. If a strain of Holsteins is developed that has superior merit, the whole Western country will be benefited.

The results are now sufficiently definite to prove beyond all doubt that the weighing and testing of milk combined with the use of heavy-producing breeding stock results in increased yields. But a great many years more will, of course, be needed to establish this strain of dairy cattle, which thrives so well on the Western plains, so it will breed true.

The principles of breeding are readily understood, and may be put into effect by anyone who has the desire and the patience to use them. While high-class stock will give the quickest and most satisfactory results, any systematic breeding plan using the stock now in your neighborhood will be the means of securing greater production in proportion to the cost of feed and labor.

It is impractical to attempt such work alone, however, because several bulls are needed and the expense of securing and maintaining them would be prohibitive. A community circuit gives a greater number of animals to work with, and makes the work important enough to attract the services of state and federal experts.

EW

Winning in a Man's Job

A Young Woman, Just Turned Twenty, Has Made a Small Fortune

By ROBERT H. MOULTON

YOUNG girls who have made small fortunes by their own initiative and persevering labor when just out of their teens are scarce. Here is the story of one of that limited number—a California lassie who, while only wenty years old, owns a nursery business estimated o be worth not less than $15,000, and all of her own aking. Her name is Miss Susan Stockschlaeder, an ut-and-out American notwithstanding her name.

The small beginning from which her nursery busiess has grown was a planting of seed she squeezed rom a box of grapefruit bought at a bargain with er total capital saved up to that time. Expert nurerymen now say that at the conclusion of her present eason's operations her nursery property, good-will, nd bank balance will be nearer $30,000 than $15,000. ll this she has accomplished from transforming a ve-acre tract of vacant land into a beautiful, flourhing little nursery ranch nd gradually enlarging her perations to a total area f fifteen acres.

As a very little girl this ow experienced young nurrywoman played with dolls her father's greenhouse ear Rochester, New York, d here she absorbed valuble ideas of the methods llowed in greenhouse-opating and plant culture. t the same time she develed a love for plants and wers that later was to ape her entire life. Growg larger, she did her bit help her father, one of r jobs being the pollinizg of cucumbers grown der glass. This transrring and mixing of the llen from flower to flower done in the open by bees d insects, but for the litgirl it was a delicate job, uiring skill and unlimited rseverance. The cucumrs produced by her help d in midwinter in those ys for a bonanza price. a reward for her good rk she was given a corr of a greenhouse for her n use, from which she sed enough vegetables and wers to buy her clothes, a lin, and to pay for lessons the instrument. It will be seen that this early ining was of the right sort as we follow this young man step by step. (For the remainder of this ry Miss Stockschlaeder's name must be Susan only, conserve space.)

Susan's family soon moved to San Bernardino nty, where in due time she was graduated from h school and found herself face to face with the essity of earning a living, there being five younger ters in the family.

Begins in Back-Yard Seed Bed

S NEITHER "counter-jumping" nor office work appealed in the slightest to Susan, she decided to ow her natural inclination and go into the nursery iness on a small scale—and grow. But with pracly no money to be had, getting a start was a d trick to tackle.

s a beginning, Susan bought a box of grapefruit m a packing house and planted the seeds back-yard seed bed. Her hopes were high n the little seedlings broke through the und, but she well knew the path ahead was be a strenuous one. Day after day she ivated, irrigated, and tended her baby s, but her reward was comforting. At the of the year she sold her crop of seedlings nurseryman, Mr. R. E. Blood, for $96. once she invested her entire capital in e citrus seed—$25 for Florida "sour" seed the remainder in "sweet" seed stock and rovements for her seed bed. Then, with seed bed much expanded, she repeated the year's operation. At the close of her secyear she had 75,000 seedlings to show for painstaking, persevering, intelligent ation given to her task. What should be the move? Susan realized the time had come egin her real nursery enterprise. But could she get the needed land without s? The problem was solved by the nurman who bought her first crop of seeds offering to lease her a five-acre tract a miles from her home, and allow her to use surplus water from his irrigation plant out charge. This land is a part of her rged nursery ranch where she is still dobusiness.

er first move was to begin the great task moving 30,000 of her seedling trees to the y leased place and set them in nursery . Long, weary days, extending from ise to sunset, found her toiling painstak, setting and irrigating her little trees making the daily six-mile foot journey, les sometimes carrying a load of little from her home seed bed. Later in the n she secured a bicycle, which helped wonderfully in carrying the whip-like little seedlings to her ranch, and then kind neighbors began "to glory in her spunk" and occasionally carried a buggy load of trees when going her way.

When the time for budding her seedlings arrived, she sought expert advice and training. But as soon as she had mastered this delicate operation, Susan budded her own trees, thus converting the hardy seedling stocks into trees that would bear the most valuable fine-flavored commercial fruits. The well-formed vigorous trees now filling her nursery rows attest the skill that this young nurserywoman has attained to in culture and propagating as well. This skill in budding and culture is to be accounted for only in part by natural adaptability to the work. After deciding to stay with the nursery business "for keeps," Susan spent every evening and available hour studying the books of the best nursery authorities. Now it is no uncommon thing for fruit ranchers throughout that locality to hunt up "Susie" to help them out of difficulties in the propagation of their citrus fruits.

A fortunate asset during the early years of Susan's nursery development were several capable sisters who helped tide over the period when no revenue was in sight

Here let me give Susan's own words describing a critical time in her nursery-developing enterprise:

"The winter after my five-acre ranch was all set to trees which had cost me so much toil in resetting, irrigating, cutivating, and budding, I froze out completely. The larger number of my promising trees of the previous fall were so badly frozen as to be nothing but dead stubs. Early in the spring I nursed the trees that gave evidence of life, and began resetting the larger part of my ranch with trees taken from the old seed bed. That summer the trees grew finely, and from September 1st to November 28th I budded 25,000 trees. To accomplish this I had to work from daybreak to dark, but everything went on lovely except there was no money coming in. About that time my father was able to get me a horse, buggy, and harness; nothing fancy, the whole outfit costing just $17.50, but it answered my purpose and made possible increasing my operations the following season.

"That spring I had plenty of trees ready for market. The first tree sold out of my nursery was bought by Mr. R. E. Blood for $2.50. The sales that season were only moderate, but I took in enough money to clear myself with the world. I think a part of my sales that year were the result of several accounts local newspaper men published in their papers, which were copied in other of our state papers.

"In the meantime I was growing more seedlings, setting them in additional land I had leased and budding them to new varieties. Of course, as my operations enlarged I could not do all the work myself, and got the help of my younger sisters and occasional outside help, which enabled me to give particular attention to the budding of varieties requiring greater skill. Some of these less common sorts, of course, returned me a much better price.

"Last year and this year I advertised my nursery stock, and have sold trees as far as 1,000 miles away. This season I am employing from four to six men, mostly Indians, during the busy season, and two to three all the time. I pay them $2.50 for nine hours' work, and although I am 'only a woman,' they must show that they earn their wages; otherwise their stay is short.

"Up to this time my bank account has not kept pace with the enlargement of my operations, but the prospects are now bright and I have hopes of getting good returns for all the toil, study, and energy that have gone into my enterprise.

"But the main reason for my being willing to give my experience to FARM AND FIRESIDE is the hope that other young girls may be led to break away from the thought that indoor jobs are the only thing a young woman can undertake. Now that so many young men must leave for the war, we girls must stand ready to do our part. But no girl should consider building up a business like a nursery unless she is willing to stick to the job through thick and thin. Specializing in ranching is no job for a "slacker."

In field-work outfit she dexterously "budded" baby trees from dawn till dark

Fell 45 Feet in Well

By E. A. LAGERGREN

THREE years ago I decided to dig a well, as we were in need of better water supply. I decided to dig it four feet square and timber it in four-foot sections. That is, as I dug four feet I would timber it and then nail a ladder to each section so as to be handy to get down and out. I was down about 55 feet, when one morning, after I had shoveled only a couple of bucketfuls, I became faint, as the bucket was going up. So I started to climb out, but kept getting weaker and weaker until I could hardly take another step. I got within ten feet of the top when I said to the man who was helping me dig the well, "I just can't go any farther." He said. "I will send the rope down and you get hold of it and I will help you up."

I do not remember of him telling me this, but he said that I got hold of the rope with both hands and swung out in the middle of the well and let go. When he saw that I had fallen he began to call for help. A neighbor came over, went down, and tied a rope around me and I was windlassed out. The next thing that I knew I was in bed, asking, "What does this mean?" My wife said, "Why, you fell down the well."

She told me that I had been unconscious for about four hours. The doctor that attended me expressed a desire to see the well, as he did not think that I could fall 45 feet and live. When he came back to the house he said, "There isn't another man in the State of Oregon that can do that." In several weeks I was able to work. It just happened that by falling feet first and being unconscious that I was not killed.

I hope that all who read this will not take such chances, no matter what kind of work they are doing. If I had tied the rope around my body for "safety first" each time that I went down and when I came out, I would have been safe, as we never know what may happen. I had no idea of fainting, as I had never fainted before.

I am told that the clammy dampness in a well, combined with lack of ventilation, often affects persons not accustomed to well-digging.

EW

Our Winter Egg Crop

Good Profit from 400 Layers When Feeds Are Costly

By MRS. GEO. L. RUSSELL

The efficient chief of a 400-hen industry

THE flock of hens that does not produce plenty of eggs now that feed prices are soaring is an expensive investment. With corn selling at wholesale for more than $1.50 a bushel, oats at 60 to 70 cents, wheat at almost a prohibitive figure, and all other feeds high in proportion, the poultry keeper must make sure of good laying stock.

There are certain conditions under which we can expect to secure winter eggs, and we must plan in advance for our job. We must have hens of the right age. Matured pullets are preferable. Yearling hens are next best. Hens more than one year of age will lay very few eggs during cold weather. Given hens of suitable age, bred for eggs, supplied with a good egg ration, and housed in a comfortable house, a profitable egg yield is almost a certainty.

We have found it to be an excellent plan to house the matured pullets and most promising yearling hens in a separate room or house from the remainder of the flock. In this way we can feed a good egg ration to these, and the remainder of the flock can live well on a much less costly ration. Old hens, even if fed an egg ration, instead of laying will store up fat and not be in as good a condition for breeders in the spring as hens that are given just a "good living" during the winter. The roosters may be housed in either a separate house or with the old hens. Pullets that are not mature need a wide variety of feed to develop them quickly, so we often put them in the same room with the layers.

Sprouted Oats a Valuable Feed

THE houses need not be expensive, but there must be good light, sunshine, ventilation, and a dry floor. Shutter-like ventilators rightly placed are good, as they admit fresh air all the time and still the rain and snow cannot blow in. They have the advantage of a muslin curtain, for they need no adjustment, and you can rest easy if you awaken in the middle of the night and there is a severe rain or snow storm raging. The hens must not be crowded. They should have enough space so each hen can have room enough to scratch in a deep litter of straw. The house the layers use should be connected with a large lot sown in some kind of green feed.

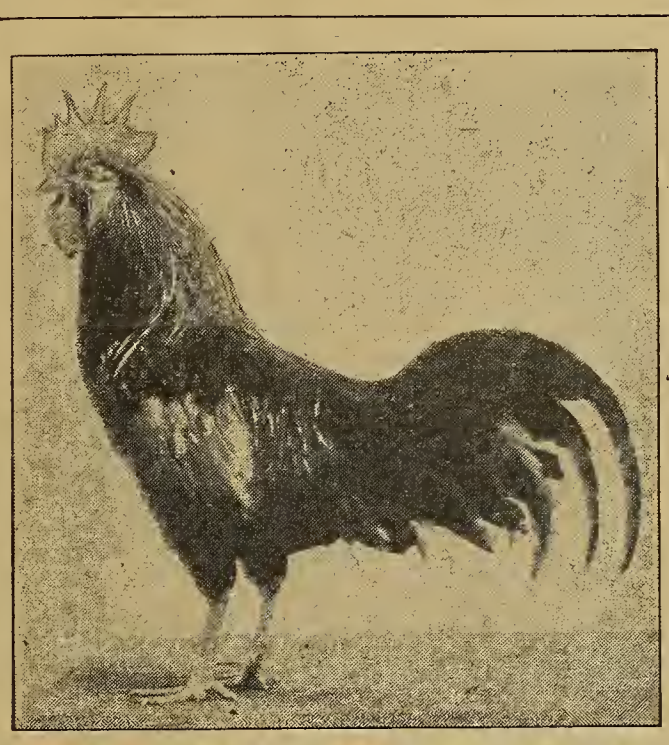
Our layers go into winter quarters about the last of October. Our lot contains one-fourth acre, and is green with wheat late in the fall and early in the spring. Our flock spends much of the time out in this pasture, but when the ground is covered with snow or it is cold and raining, I confine them to the house, for nothing will stop a hen from laying quicker than to run out in stormy weather. A hen must be "fooled" into laying in the winter. Springtime conditions will fool her. Tender green sprouts and bugs always accompany spring. So we supply these feeds in the coldest weather. The tender green sprouts are sprouted oats, and the bugs and worms are substituted with commercial meat scrap.

I use an oats sprouter. It is very convenient and makes very little trouble. Some claim that the oats can be sprouted successfully in gunny sacks around the kitchen stove, but what woman wants her kitchen thus littered up? The oats sprouter is a good investment for any farmer. The oats when sprouted make at least one third more feed than when dry, and supply a lack that the dry oats will not. I have my sprouter in the laundry-room, next to the sink. Thus situated, trays may be placed over the sink to drain. The sprouter I use has four sections—two sections to a tray. The bottom of the tray is galvanized iron punctured with holes about the size of a nail point. The trays measure 17x17 inches. A square inch of sprouted oats is sufficient daily succulence for a laying hen. My sprouter cost $12.50, and has paid for itself many times. I soak enough oats overnight in cold water to fill two trays at a time. In the morning the trays are placed over the sink, the oats poured in to drain, and then placed in the sprouter. The sprouter is supplied with a lamp, but as my laundry-room is just off the kitchen the room is sufficiently warm so that the lamp is lighted only in zero weather. Even should the oats freeze a little, they are not hurt; but of course they won't grow very rapidly when cold. In spring and fall the trays must be stirred and sprinkled each day; but in cold weather, once every two days is sufficient.

The sprouts are allowed to get from one to three inches high before feeding, depending upon the amount of green feed needed. When the sprouts are only one inch high, there is still some nourishment in the oat kernel, but when the sprouts become longer, there is nothing but the husk left. The oats sprouter is the means of solving the green-feed question for the winter layers, and without green feed of some kind we are not able to get many winter eggs.

Perhaps my exact method of feeding will be of interest. In the morning the layers are fed a mixture of oats and wheat, about equal portions, a pint to every 10 hens or a gallon and a half to every 100 hens. At noon they are given a small feed of scratch grain and some sprouted oats—just enough to keep them busy for a while in the afternoon. At night they are given a pint and a half of shelled corn for every 10 hens. All these grains are fed in a deep litter, so each hen earns her feed by working. Of course this grain ration is not always the same. Sometimes we are fortunate in having kafir corn. This is well liked by the hens. In addition to these grains the hens have a dry mash constantly before them, which is composed of 100 pounds bran, 100 pounds shorts, 100 pounds cornmeal, 45 pounds commercial meat scrap, 3 pounds fine salt, 3 pounds finely ground charcoal. The ingredients are all dumped into a large bin and thoroughly mixed with a shovel. It is then put in hoppers as needed. These hoppers are built along the sides of the wall of the hen houses, and the hens help themselves at any time they wish. They have all the clean water they want, as water is just as essential in egg production as feed. Also, they have a good grade of oyster shells, and grit. We find the so-called "chat" that is used in making concrete very satisfactory as grit, as the small broken rocks have sharp edges.

The layers must be fed regularly, and fed their last feed before dark. I have known just one miss in feeding to cause a noticeable falling off of the egg yield.



Brown Leghorns have not lost favor at the Russell plant, but are held to be as good as the best

The gable style of scratching and laying house provides plenty of light and ventilation, and with a warmer annex for roosting quarters good results are secured

College Training

By A. T. MORISON

OWING to the development of the secondary schools in rural districts, the farmer's son now receives as good high-school training as the town lad. Moreover, he supplements this education with a balanced sense of judgment and a well-grounded dependence on his own ability to accomplish practical results. These are adjuncts which he has acquired through the man-building life he has led.

Thus, favored by educational advantages and environment, the farmer's son finishes high school and faces the life before him. Like the city boy, he confronts three good possibilities, and from them he must make his choice. He can at once go into business, which includes farming; he can take a classical or scientific course in college, or he can study scientific agriculture as further preparation for life either on the farm or in direct connection with it.

I will base my remarks upon my own experience when as a farm boy I decided this question, and upon my later observations as a member of an agricultural college faculty.

The essential reason considered by the farmer's son in deciding the agricultural college question is, "Will it pay for the time and money spent?" He is too well balanced mentally to have very strong longings for the "rah-rah" college life so elaborately and untruthfully portrayed by many books and moving pictures, and no boy can be aware of the innate benefits which he is bound to receive from college training.

Twenty years ago, when technical agricultural education was coming into vogue, stories were told and written about farm boys who went to their state agricultural colleges and for the first time learned the difference between their own razor-backed hogs and the pure-bred larders owned by the institutions. Then there was an old classic about a farmer's son who lifted the mortgage on the home place by going to the state college and discovering a new fertilizer which suddenly rejuvenated the worn-out fields and produced manifold yields of crops. These stories had their place. They served to stimulate interest in technical agriculture, and in some instances doubtless were literally true (as in the case of first applications of lime), but in the present day they are not often applicable, except in very extreme cases.

The farmer's son cannot at college learn any secrets which will enable him suddenly to out-farm his neighbors. Such mysteries do not exist in any honest occupation. Instead, he will learn many facts which, when supplementing his practical experience, will enable him to become a better farmer and will insure him prosperity in his future work. He will learn to increase the fertility of his fields by supplying the plant foods actually deficient in the soil, and, more important still, he will learn to maintain this increase while farming at a profit. He will learn how to choose the crops for each varying field condition of his farm. Then he will study the problems of farm management and marketing, a knowledge of which is bound to benefit him in practical life.

In college, mixing continuously with the men of his class, it becomes part of his nature to want frequent associations with congenial companions. When he graduates he takes this custom with him, and it causes him to become a leader in building up a community society at home. This same college fellowship also acquaints him with the ways of the men of the cities, who later will be the customers of his produce. He learns to meet them easily and surely on an equal business footing. Then, less pleasant to consider perhaps, is the fact that the farmer's son in college has an opportunity to mix with the bad, tricky men of the world—the type which he has rarely met before. Rubbing elbows with them for four years, he learns their ways and how to defeat them, thus often saving himself many bitter days in his life to come.

A knowledge of all these facts and of many others comes to the farmer's son who goes to agricultural college. He will discover no mysterious secrets of agricultural wealth, but instead he will learn how to farm better and to have a better influence in the community.

Neōlin

TRADE MARK REG. U. S. PAT. OFF.

Better than Leather

"It is almost incomprehensible that a shoe-sole could wear like that!"

YOU have doubtless read of the surprising sole-wear experiences of Neōlin users. Some have stated Neōlin wear to be twice longer than their leather sole-wear. Others three times; others longer yet.

Frequently it is even found that after months of wear the appearance of Neōlin does not even suffer. Take this experience for an example:—

Gentlemen:

"Speaking of Neōlin Soles, I have never seen such an extraordinary resistance to wear. Nine months ago I had a pair of Neōlin Soles put upon a pair of my shoes. Ever since then I have been walking on these shoes practically every day and all day. Furthermore I don't even notice that they are worn at all. They look, in fact, as if they had been worn about a week—just long enough to get the newness off. It is almost incomprehensible that a shoe-sole could wear like that.

"But that is not all. All these months I have been enjoying a wonderful resiliency and a sensation like that of perpetually walking on a nice soft lawn. Last, by no means least, is the waterproof feature of these soles. And they ARE waterproof, as I have proved to my entire satisfaction while walking through slush and water this past winter. I say by all means pass this on and let others get the good of these wonderful soles."

(Signed) OTTO C. RADDE
Scientific Eye Examiner
7903 Euclid Ave., Cleveland, O.

Men, women, and children wear Neōlin Soles in black, white, tan — and in all seasons, in all weathers. Neōlin Soles are not rubber. They are firmer and lighter and don't crack or tear loose or stretch like rubber soles. And they're better than leather because longer-wearing, more foot-comforting and waterproof.

Protect yourself from quickly-deteriorating substitutes by looking for the name "Neōlin" underneath the sole. *Mark* that mark; stamp it on your memory: Neōlin—

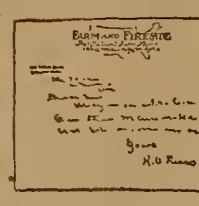
the trade symbol for a never changing quality product of

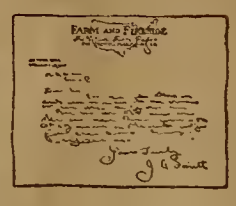
The Goodyear Tire & Rubber Co.
Akron, Ohio

Neōlin Sole, worn one-sixth through in 33 days, on right foot of experimenter. Leather Sole, worn clean through in 33 days, on left foot of experimenter.

The Editor's Letter

Liberal Savings vs. High Wage Scale





LAST April Governor Whitman of New York appointed a food-supply commission to take a census of the State's resources, and to forecast as closely as possible where the people's "three squares" a day were coming from. A preliminary report from this commission has just appeared, and is summarized in a list of "Important Facts Shown by the Census."

Heading the list is the item of "Farm Labor Shortage," and here are some of the revelations: From the farms of New York (which number less than 200,000) more than 87,000 young people—44,000 sons and 43,000 daughters—have left home for work other than farm labor.

Most of them have gone to the cities and villages. Furthermore, New York State has nearly 16,000 fewer hired men this year than a year ago. The census shows the need for 55,000 additional men for farm work this year, and nearly 8,000 women and girls for light farm duties and household help.

The high wages offered by manufacturing concerns, and especially the munition plants, seem to have bled the farms of their young manhood and womanhood just at a time when good crops are so important. And while I am unwilling to accept the figures on their face value, because some of the labor is needed for just a short time, the matter is one of deep concern. Nor do the figures cited take into consideration the army draft, which will soon add further to the shortage of labor for peaceful pursuits.

The Food Commission of New York State, I am glad to say, has power to do constructive work as well as merely to investigate. Nearly 5,000 farmers reported that they needed farm machinery which they were unable to get. A machine in many cases is as valuable as a hired man, and the commission, recognizing this, has supplied most of these needs. It purchased 40 tractor-plow outfits to be issued to county farm-bureau associations. The tractor and its equipment remain the property of the commission, though if any member of the associations wishes to buy it he may do so, which has been done in 31 cases.

But even this kind of actual service by the State does not help the farmer who belongs to no organization, who is in need of farm labor and yet who cannot afford to pay the prices offered in the cities where wages for a week are sometimes more than they are in the country for a month. The heart of the whole problem is, "How can we retain the labor we now have, and how can we secure more if we need it, in spite of the wide difference in the wage scale?"

Two letters I have lately received point out a few traits in human nature which may help in the solution of this problem. These letters, which I have permission to publish, indicate that alert young men soon learn that self-betterment is more desirable than the mere matter of a high wage, and they should be encouraged toward this conclusion.

ONE of these men, who signs himself Thomas J. Sheridan, lives in Michigan, and this is what he says: "There seems to be quite a difference of opinion about the wage a farmer should pay this year. Most of us are unable to get the help necessary to farm the way it should be done in order to raise the best crops. The floating labor has been attracted to the cities by the high wages offered by manufacturing industries. And yet we are offering all we can afford to pay and make a living, notwithstanding the high prices received for farm products.

"Wage earners in the cities, claiming they are hardly able to live, to say nothing of saving anything for a rainy day, have shown eagerness to get a chance to work in the country. They say they want a chance to help themselves and to help the country during this war crisis and time of food shortage—'if the farmer would only offer them a fair wage.'

"In the city they get from $2.50 to $5 a day of eight or ten hours, and consequently consider the prospect of working twelve or fourteen hours a day for $30 a month in the country as unthinkable. Now, it is probable that these city laborers do not understand that the farmers are offering to board and lodge them free of charge, besides paying them $30 a month. Nor do they realize that when a farmer hires a married man with a family a house is provided for them, rent-free, and that a garden, free milk, berries, melons, and other farm-raised products are included. So all that the family has to buy are such things as sugar, tea, coffee, and package groceries. As I figure it, $30 a month on the farm under the conditions described is about $300 a year better than $3 a day in the city, where you have to pay for board, lodging, car fare, and the multitude of miscellaneous demands."

THE other letter gives the vivid experience of a young farmer who is glad to be back on the farm regardless of the lure of high city wages. "When I say I would rather work in the country than in the city," he writes, "I speak from the heart out. I've been through the heat and sweat of many a harvest. I've had most of my hogs die with cholera. I know the sunny side of the farm, and I know the dark side. I've also had many kinds of jobs in the city. That's why I say I speak from experience.

"Nine men out of every ten in the city would gladly come to the farm if they had the opportunity. The remaining one man of the ten tries to 'kid' himself into thinking he is happy in the city.

"One of my city jobs was as fireman at a large power plant in the city. I began work at midnight every night, and shoveled coal into six furnaces twelve hours, quitting at noon. It was hot, heavy work and I had two bosses to work under. One is bad enough, but two are worse.

"So I have decided that the country is good enough for me. Every trade or profession has its drawbacks, for God never meant this old earth to be heaven; otherwise He would not speak of the heaven that is to come. But those of us who live in the country should be happy, for we have the room to be happy in. The poet says:

"They drive home the cows from the pasture,
Down through the long shady lane,
Where the quails whistle loud in the wheat field
That is yellow with ripening grain.

"And that's the trouble with most of us—we are not poetic enough. We should notice the birds more and listen to their song. We have as much time as anyone who has to earn his bread by honest toil. You have time for these things while coming home from work or while going after the cows or on Sundays. If the country is a dull place to live in, make it bright. You can have your lawn suppers and your barn dances. It's up to you, dear reader, to start these things. The thing for us to do is to live while we are alive."

What do the thoughts of these two men suggest to you? I hope they inspire the desire to be of some service to your fellow men and to help yourself at the same time. Last winter a wage earner with a family here in Springfield announced through the newspapers that he would give his services free to any employer who would agree to supply his family with the necessities of life. This man had been steadily employed at the customary shop wages, but his earnings never seemed to catch up with his expenses.

If you have a son or daughter who seems discontented because of the high wages offered in the cities, point out that, while they might earn more in town, they can save more and live better in the country. Let us give more publicity to this matter. To intelligent workers, which are the kind we most desire, an opportunity for self-betterment is more attractive than wages alone. And the call of the quail in the morning makes, I think, a happier and more willing worker than the blast of the factory whistle.

The Editor

POSTUM

A wholesome table beverage with winning flavor.

Used everywhere by folks who find that coffee disagrees.

"There's a Reason"

KITSELMAN FENCE

Get It From the Factory Direct

HORSE-HIGH, BULL-STRONG, PIG-TIGHT.

Made of Open Hearth wire heavily galvanized—a strong durable, long-lasting, rust-resisting fence. Sold direct to the Farmer at wire mill prices. Here's a few of our big values

26-inch Hog Fence - 24½c a rod
47-inch Farm Fence - 35½c a rod
48-inch Poultry Fence - 37½c a rod
Special Prices on Galv. Barbed Wire

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. It's free. Write for it today.

KITSELMAN BROS. Box 271, Muncie, Ind.

Better Buy That Buggy NOW

Save $20 to $40

I am going to give buggy buyers a chance to buy genuine Split Hickory buggies at prices they will never get again. Material costs are going higher every day — so are buggy prices. But if you are going to need a buggy this fall or next spring, better buy NOW. Just write a postal and get my "After Harvest Cut Price List" and catalog of my famous

SPLIT HICKORY

Buggies and Harness and see the big bargains I am offering those who buy NOW before the higher prices go into effect. See how I will save you $20 to $40 on any of the 150 nifty, snappy styles shown. Next year prices will almost double. I give 30 Days FREE Road Test and 2 Year Guarantee. Split Hickory Vehicles always give satisfaction. Don't delay—send today and get my big money-saving prices.

H. C. PHELPS, Pres.
The Ohio Carriage Mfg. Co.
Station 27
Columbus, Ohio

It is to your interest to mention Farm and Fireside in answering advertisements.

"50"

"50-50" means that I stand ready to meet you half way on engine prices—sell direct from factory—Make Immediate Shipment—save you $15 to $200 according to size. I make nothing but engines—Kerosene and Gasoline—2 to 22 H-P.—give you the benefit of 31 years' continuous, practical, engine-building experience. Write for latest price list—all styles—Stationary, Portable and Saw-Rig.

WITTE KERO-OIL ENGINES

time-tried and time-tested—cut fuel cost 50 per cent, using kerosene—start as easy as a gasoline engine. My terms are Cash, Payments, No Money Down—90-Day Trial—5-Year Guarantee. Read my new illustrated book, "How to Judge Engines," before you choose any engine. This is a book for the farm owner as well as the shop expert. By return mail—FREE.

ED. H. WITTE, Pres.

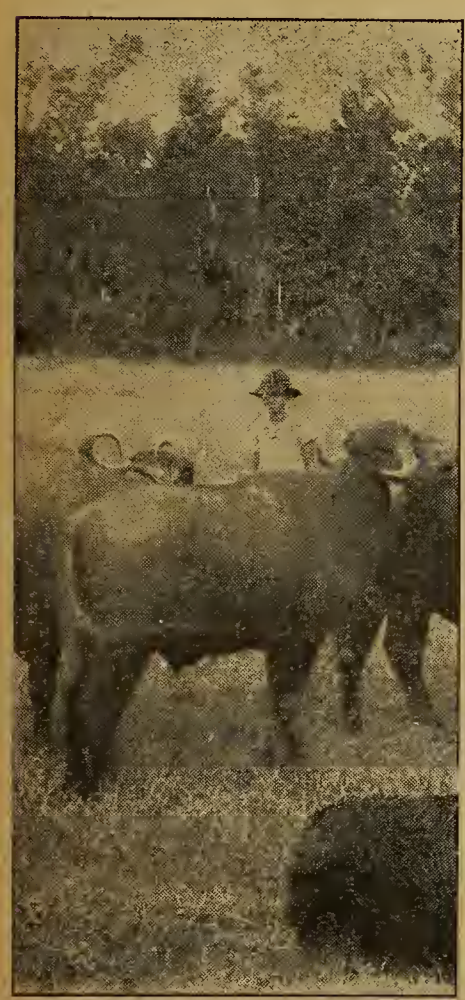
WITTE ENGINE WORKS
2062 Oakland Ave., Kansas City, Mo.
2062 Empire Bldg., Pittsburgh, Pa.

"50"

A GROUP of native mares and half-bred, or mestizo, colts. The native horse is a very small animal with fine bone and little quality. The Bureau of Agriculture has been importing light stallions from Australia and the United States in order to improve the herd, but the natives cling to the practices of their ancestors, and it is difficult to win them over to up-to-date methods of stock-raising. However, the number of mestizo horses is increasing in the islands.

THERE is a great demand in the Philippines for milch goats. Several experiments have been conducted by the Bureau of Agriculture in the way of introducing foreign strains into the country, but owing to the unusual climatic conditions they have not been very successful. The strange-looking animal in the photograph has been imported from India, and is being bred to native animals in an effort to produce a hardy breed of high quality.

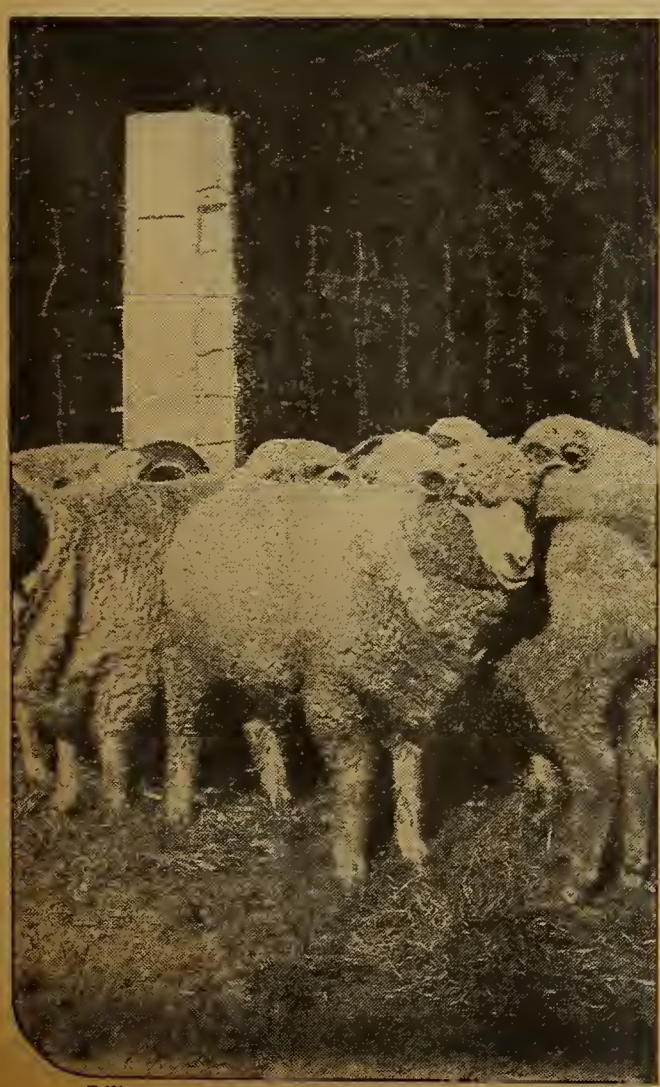
Live Stock in the Philippines



THE carabao takes the place of the horse in much of the field work in the islands. The native animal is quite susceptible to rinderpest, so that many Indian carabao like the one represented are being imported. Indian carabao are practically immune to the disease, and are superior to the native-bred stock.

THESE queer-looking pigs bear little resemblance to their fine cousins in the United States. They have been inbred so badly that they are sadly lacking in quality and conformation. To improve the situation the Bureau of Agriculture has established a number of public breeding stations where the services of pure-bred Duroc-Jersey and Berkshire boars are free to natives who wish to take advantage of them.

THIS cow is also from India. The Nellore Indian cattle are almost totally immune from rinderpest, the worst enemy of Philippine cattle, and the Government cannot supply enough of them for native use. The importation of better stock has resulted in a remarkable improvement in island cattle within the last few years.



E W

LITTLE success has followed the Government's efforts to improve the sheep. Disease has always devastated the imported flocks before any headway could be made. Foot rot is prevalent among the small herds to be found in the islands, and is hard to fight. On account of the heavy rains each year it is thought that the climate of the islands will always prevent any great advance in the raising of sheep.

COCK-FIGHTING is a favorite sport with the Filipino, and the heavy betting at the cock pits often takes the last cent away from the foolish man who has staked everything on the loser. It is not uncommon to see ten to twenty of these fighting cockerels tied in the yards of the wealthy Filipinos, and even the poor people usually have from two to five. They are courageous birds and contests are often fought to the death.

FARM and FIRESIDE

THE NATIONAL FARM PAPER

Harry M. Ziegler, *Managing Editor*

Associate Editors:

D. S. Burch B. F. W. Thorpe Ruth M. Boyle

Published Twice a Month by

The Crowell Publishing Company

Springfield, Ohio

GEORGE H. HAZEN, President

Executive Offices: 381 Fourth Avenue, New York City. Branch Office: Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

H. J. Brown, Jr., *Business Manager*

D. W. Henderson, *Advertising Manager* L. V. Rodda, *Circulation Manager*

Subscription Price

One year (24 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents a year.

About Advertising

Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.

Advertising rates and regulations furnished upon request.

September 15, 1917

What Are We Fighting For?

WHEN we went to war on the sixth of April, the phrase that thrilled through the country in justification of our act was "to make the world safe for democracy."

This in a broad sense is what America is fighting for, but nations do not go to war without some specific issue to touch off the dynamite. The spark in this instance was the declaration by Germany, in clear violation of all international law, that in pursuance of her submarine campaign she would continue to murder American citizens and destroy American property on high seas. There was only one answer the United States could make and still hold her place among nations, and that was war.

Because she is fighting their common enemy, however, America has not embraced all the aims which the complex company of nations forming the entente may be struggling for. We went to war on one issue—an American issue—the right of our citizens to sail the high seas without being threatened by foreign warring powers. Italy may want the Trentino, France may demand Alsace-Lorraine, others may ask indemnities.

We have not entered the world war to help them get what they want, but simply to force Germany to retract a policy which destroys American life and property.

By throwing her strength into the struggle on the side of the Allies and against Germany, the United States will undoubtedly further the aims of the entente, but Germany must have recognized this and weighed it well before she decided that her ruthless submarine campaign with America as an enemy meant more to her than to keep America neutral and give up the sinking of neutrals.

When will America be ready for peace? If Germany should renounce the ruthless submarine campaign as it affects neutrals, would the aims of the United States be satisfied, and should we be ready to withdraw from the war?

No, for this reason: The submarine is only one phase—the phase that directly affected the United States—of a policy which has shocked and made unsafe a whole world. The working out of this policy to the end would mean an unthinkable condition of international brigandage. The United States has declared war on this policy, and until Germany not only renounces the submarine campaign, but also gives evidence of renouncing the policy as her guiding principle in dealing with foreign powers, the United States will not have attained her aim.

The same policy that sank the Lusitania crushed Serbia and subjugated Belgium, and no settlement which does not provide for the liberation and restoration of Belgium and Serbia can atone for the Lusitania. Thoughtless and malicious statements have been made that we are "fighting Europe's battles," "protecting entente capital," etc. The real truth is that we are fighting for our independence, for our very lives in the face of a policy of national brigandage which has already crushed weaker nations and which with the aid of turbulent Mexico threatened our southern border. Only the complete renunciation of this policy can make the world safe for *us*.

Don't be Caught Napping

IT WAS a "tight squeeze" to get a sufficient supply of high-quality field and garden seed in many localities last spring. Can we hope for any improvement in 1918? The heavy demand for cereal grains and staple edible crops of all kinds for home and foreign food requirements is sure to detract from the usual seed supply saved. The result will be that seedsmen and individual gardeners may endanger the 1918 seed supply by selling short when the persuasive high prices appeal to their sense of immediate gain.

If the need of bumper crops remains as insistent to supply next season's wants as the present outlook indicates, the seed situation next spring will be even more critical than last. The only way to safeguard a supply for seeding next season's crops is for farm owners, farm renters, truckers, gardeners, and seedsmen to co-operate in a systematic seed-saving campaign as a "safety first" war measure. As a nation we may have a profound desire to help press the war to a favorable conclusion, but if we neglect to insure plenty of high-quality seed for next season's planting, all the zeal in culture we may employ will not make up for lack of foresight in seed-saving.

The Needs We Really Need

HOW often do we as farmers do without things that we really need, things which would cost but little, either in time or money. Take, for instance, such simple equipment as loading chute and hurdles for stock. A little lumber and a few hinges, bolts, and nails are all that is needed in the way of material.

Loading hogs into a wagon preparatory to hauling them to market is a simple matter where a chute, light but strong, is available. All heavy lifting is avoided. Hurdles are even a greater help, because so frequently used. How much better are hurdles than whips in cutting out or sorting sheep or hogs or in driving them into small enclosures.

On one farm when work of this kind is to be done, the entire family and the hired man engage in a great hurrah which continues until everybody is hot and tired. On another farm one man with a helper, perhaps just a boy, each with hurdles, works quietly and without confusion. The stock is not excited, and there is no loss of strength, temper, pork, or mutton.

The Value of Shade

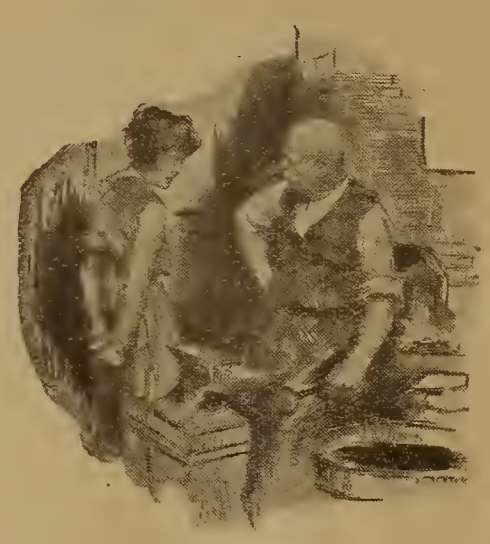
OUR sympathies go out to the unfortunate brood mare and foal pastured on a bare, brown, shadeless, and often waterless field in August and September. It is a fundamental principle of successful stock-raising that the young animal should be kept steadily growing and gaining in flesh, and that the "milk flesh" of the foal, calf, lamb, and pig should be carefully conserved. Lost, it never is perfectly regained. Stunted, a young animal never perfectly develops.

Exposure in the sun-stricken, fly-infested pasture is about the most common and effective way of rendering out milk flesh and permanently stunting the foal. It starts by lessening the mare's milk. She, poor creature, suffering terribly from fly attacks and fretting, together with lack of nutritious, laxative feed, cannot fail gradually to dry up her milk secretion. The foal suffers similarly and equally, and not only needs more milk than it gets but is injuriously affected by the milk supplied by the overheated, underfed mare.

The wise horseman sees to it that there is plenty of shade and pure drinking water in the pasture, and often furnishes a clean, darkened shed for the mare and foal to shelter in during the heat of the day. He knows, too, that drought-shortened and dried grass will not suffice for full milk secretion and the adequate sustenance of the mare and her foal; he adds green-cut corn fodder, oats and bran, and, if need be, hay, that both may be fully fed.

Runaway Julietta

YOU'LL love Julietta. She's different! Beautiful, overflowing with vitality and love of life, the embodiment of success, she dominates the great new serial story by Arthur Henry Gooden which will begin in the next issue of Farm and Fireside. You will like her courage, her resourcefulness, her willingness to take a chance, but you will like best the fact that she's true woman through everything. From the moment that she casts off the shackles of a hateful guardianship, changes her name, and runs away, to the day that she comes back triumphant, the spell of her personality will hold you. Julietta makes a big decision and takes a great chance in the first chapter, so don't let anything keep you from beginning the story in the next issue.



Our Letter Box

Study Your Machines

DEAR EDITOR: It seems almost impossible that people in this day and age could be so ignorant as to treat their animals as Mrs. Armour states in the Editor's Letter in the FARM AND FIRESIDE of April 21st, although I have heard of their doing such things years ago.

I very much doubt if you could find anything of the kind in this section, and I am inclined to agree with the writer in the above-mentioned article that relief of animal suffering will come to a great extent from mechanical sources, both from the fact that machinery will relieve our teams of their hardest work and also because the operator of such machines must necessarily use his reasoning powers more, and if he will only apply the same reasoning to his live stock they will be benefited as well as himself.

Still, at the present time many men show about the same amount of judgment in the operation of machines as the people Mrs. Armour speaks about in regard to their stock. I have known men to send for an expert to come and tell them to put some gasoline in their engines, and other men have got stuck with an automobile and tinkered for hours before finding that it was out of gas.

The first year I operated a gas engine I would turn it sometimes for some little time if it failed to go, for I knew nothing else to do; but I soon found that to operate such a machine successfully you must study and know your machine. Now, if an engine fails to start I begin with the gas tank, then examine the ignition and go through a systematic inspection of each part till I find the trouble. Although I am far from being an expert, I can usually find what is wrong with my own machines in a short time, when they fail to operate as they should.

I have an automobile and also a gas engine, and I don't think I have spent five minutes for a long while tinkering with either before it would start, and they generally go at the first or second turn.

The principal trouble is that people do not study what they are doing, but grope too much in the dark.

H. C. MCCORMICK, New York.

Eighty, but Doing His Part

DEAR EDITOR: For the encouragement of the older "boys" in undertaking to do their part in helping to feed our own people and our allies, let me give a little of my last year's corn-growing work.

I am now eighty-one years old, and last year my corn plot was four rods wide and twenty rods long—just one-half acre. The land was given excellent preparation, was top-dressed and fall-plowed, and after fitting for planting was given a generous quantity—but not too much—of hen manure and rich compost, distributed in rows under the corn. On account of late cold weather the corn could not be planted till the end of the first week in June, but it was soaked before planting and every inferior kernel of seed was picked out. The corn grew at a surprising pace. Some days it grew two and one-half inches a day by actual measurement. Some of it, when mature, was eight feet tall, which is rather unusual for our flint varieties when grown in Maine. The corn was given good culture until it covered the ground too thick to get among it, and by reason of the good care given it maturity was reached a few days before danger from frost.

I cut and set up 80 shocks, from which I husked 75 baskets of first-class sound corn, which was sufficient for food material to keep starvation away from several families.

My experience goes to show that many an old fellow can be of help in furnishing food that will help us to win the war. SAMUEL YORK, Maine.

A Generous Offer

DEAR EDITOR: In your issue of June 16th a young girl from Oklahoma wishes to know how to make money to get an education.

If you will kindly put her in touch with me she can have a free home and be given a good education through the high school and in music, and when she grows up and wishes to marry she can have a good farm all fruited.

All she will have to do is to be a good girl and keep house in a bungalow, and the work will be done mostly by outside parties, such as washing, ironing, and the like.

She can have a free home, right by the high school, and all the advantages of both clothing and education, and if she is a good Protestant girl she can have the farm which lies close to town, less than one eighth of a mile to the center of the town.

Kindly put me in touch with her or any good girl who may wish a good home and companionship, and when she grows up the farm will be hers, as I have three of them and will give a good one to the proper Protestant girl who has been refined and well brought up, and she can have a car and horse and all that goes with a good and happy home. CHARLES C. ELSTON, New York.

Lives Outdoors: Regains Health

DEAR EDITOR: The loss of my health—which is man's most valuable possession—got me into my worst rut. I lost it partly by working in all kinds of weather on the farm, but mostly by living in an old-fashioned farmhouse. This house would be rated: Draft, 99 per cent plus; ventilation, none; sanitation, none.

A Western physician told me the fresh-air cure was the surest and that I should live in a tent, so it is by way of the tent method I am pulling myself out of this awful rut. Many think it impossible to live in a tent through a winter in Ohio. I lived two winters in a tent in Ohio, with the thermometer 12 degrees below zero, and during floods that destroyed cities, with no more discomfort than if we lived in a house.

Since I have lived in a tent I have never been obliged to spend one dollar for medicine, nor lost any time by sickness. This goes a long way toward helping me out of my rut, especially when it cost me $3,000 to get in.

B. H. SLAGLE, Ohio.

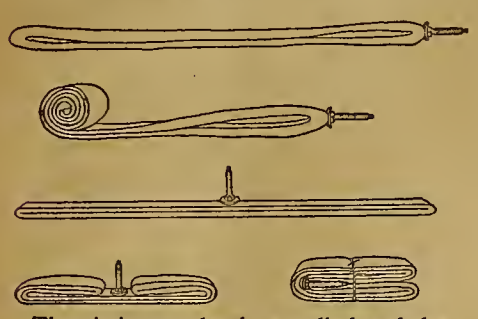
EW

Inner Tubes Neatly Folded

By B. D. Stockwell

WITH automobiles, as with most everything else, there is knack in doing the little things. The sketches show a good method of folding inner tubes so as to protect the valve and keep the tubes themselves in good condition.

First expel the air. To do this, unscrew the valve stem by means of the tip of the valve cap. Then lay the tube down and roll it up tightly. Screw the valve stem back into place before unrolling the tube. Then spread out and fold up as illustrated. Finally use wide rubber bands to keep the folded tube



The air is completely expelled and the bundle is small

neatly packed. Ask your tire dealer for an inner tube sack made of light oilcloth, and keep the tube in it, thereby shielding it from light, grease, and moisture.

Tire-Changing Contests

THE small tracks of most county fair grounds make them dangerous for automobile races, but this does not necessarily bar such tracks from being suitable places for various other forms of competition.

Among those which have proved most successful is this one: To drive without watch or speedometer so as to travel as nearly as possible at a speed of 20 miles an hour. This competition may safely include a large number of machines.

Another test of skill and experience is a tire-changing contest. The participants are required to change one or more tires, and the prize is awarded the most skillful contestant. Still another is a slow race in high gear. Thus there is almost no limit to ingenious contests for automobile enthusiasts at the smaller fairs.

Wash Cars in Shade

By Robert L. Winters

THE streaks sometimes seen on the body of a motor car that has just been washed are generally due to the rapid drying of hard water. These can be prevented by washing it with soft water, preferably in the shade. Bright sunlight causes too rapid drying, and if the water contains much lime or is dirty, the telltale streaks will be there.

The best time to wash a muddy car is immediately after road service, before the mud has dried on. Saturate a sponge with water and squeeze it just above the muddy spots. The water will flow down over the mud, causing it to drop off without rubbing. Wiping mud off generally has a scouring effect that results in scratches.

After the mud has been removed, take fresh water and a clean sponge and go over the car again, this time more thoroughly. Remove the surplus water with a clean chamois skin and allow the film of water which is left to evaporate. Do not attempt to dry thoroughly with the chamois, as it is likely to injure the luster of the finish.

Avoid Makeshift Repairs

By Carlton Fisher

THE importance of thorough work in adjusting and repairing an automobile is obvious from the following incident: A car owner of my acquaintance had a slight accident which caused his radiator to leak. He had been told that bran or sawdust added to the water in the radiator would stop the leak, and he consequently put in several handfuls, which produced the desired result. This was in the summer.

The following winter he drained the radiator each night to prevent it from freezing, but during a cold snap in January he found his radiator had burst near the bottom. A careful examination showed that the sawdust which had been put in some months ago was responsible for the trouble. It had accumulated in a soggy mass at the bottom of the radiator, preventing complete draining of the water.

The cost of the repair was much greater than if he had had the small leak soldered in the first place. Owners of old cars, especially, will frequently make temporary repairs, using pieces of wire where bolts would be better, and neglecting to put cotter pins in places where they are important. Where such makeshift work is necessitated by a lack of the proper material and equipment, as in the case of roadside repairs, it is the part of wisdom to attend to the matter thoroughly on reaching home or the nearest repair shop.

Keep Spare Tires Covered

By W. B. Collins

TIRE wear and depreciation is not always the result of service. And it is an unwise policy to neglect the spare tire under the impression that as long as it is not in use it will keep its elasticity and strength indefinitely. Casings carried inflated on demountable rims do not, as a rule, suffer as much as empty casings, because, even when uncovered, light, moisture, and dust can attack them only on the outside. But when an empty casing is strapped to the rear tire holder and is left uncovered, mud, road oil, and air gradually accumulate inside of the tire, and in time will weaken the fabric. Furthermore, when such a casing is put to use, attempts to clean it are seldom thorough, especially if it is a roadside job. The dust and grit consequently injure the inner tube.

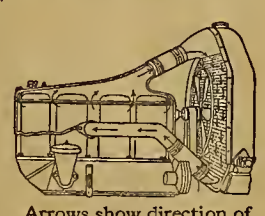
Another way in which spare tires suffer is through insecure attachment to the tire holder. Use plenty of straps, and have them tight enough to prevent rubbing and chafing. A good waterproof and light-proof tire cover will greatly prevent the injuries mentioned, soon paying for itself in the greater durability of spare casings as well as in the satisfaction of neat appearance.

Radiator Types

By W. V. Relma

THERE are a good many different types of radiators, yet they follow certain definite principles along three general divisions. All of them work on the principle shown in the upper left-hand sketch.

In the cellular type the water flows through various cells, as shown in Fig. 1. The cells are generally of copper, and the air passing along these cells cools the water as it flows downward from the reservoir at the top. The hot



Arrows show direction of circulation

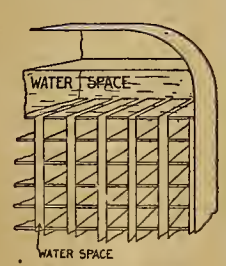


Fig. 1—Cellular

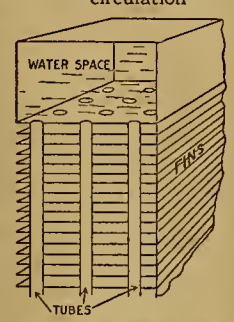


Fig. 2—Straight tube

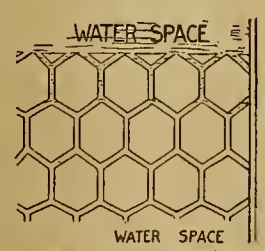
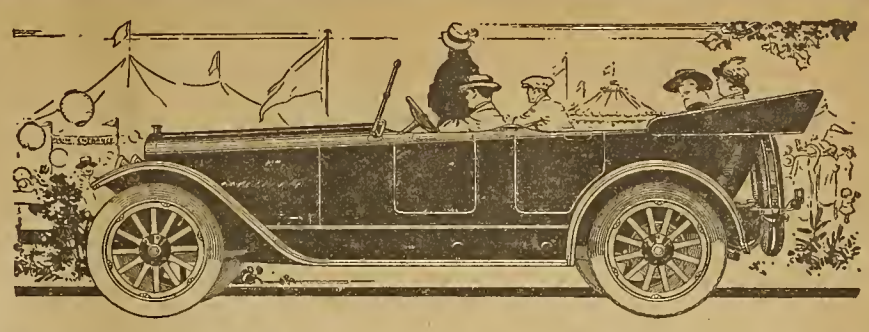


Fig. 3—Honeycomb

water is discharged from the engine jacket into this top compartment, is cooled before it reaches the bottom of the radiator, and is returned to the motor to perform its cooling duties again.

The straight-tube type is shown in Fig. 2. In this style of radiator the water is carried in the tubes and the cooling is accomplished by the action of the air upon the thin copper fins which surround the tubes. No water is carried in these fins, as a great many people suppose—their sole office is to cool the tubes.

The honeycomb type is shown in Fig. 3. In this style the water is carried in tubes, but these tubes are flat and the honeycomb effect is produced by the little bridges between, which perform the joint duty of assisting the cooling and supporting the tubes. Sometimes there are additional fins between the tubes in this type, but these, as a rule, do not show from the front.



What Double Strength

Has Done for Mitchell Sixes—Both Sizes

Three years ago we decided to double our margins of safety. That is, to give all vital parts 100 per cent over-strength. Up to that time most engineers considered 50 per cent extreme. But our 11 years' experience on American roads proved that cars could not be too strong.

Since then, the Mitchell demand has multiplied. The more men see of their endurance the more these cars are wanted. In the first six months of this fiscal year our sales increased 160 per cent.

Mitchell Over-Strength

Not one rear spring built under this standard has ever yet been broken.

Two Mitchell cars that we know of have already run over 200,000 miles each. That is 40 years of ordinary service.

Our export demand has enormously increased to countries with difficult roads.

And a long list of engineers of nation-wide fame have chosen the Mitchell for their personal car.

Still An Under-Price

Note how the Mitchell, with all this over-strength, undersells like-class cars.

You find in addition 31 features which nearly all cars omit. You find vast added luxury, excelling most cars by 25 per cent. Our latest models combine all the attractions we found in 257 show models.

Factory Efficiency

How does the Mitchell afford so much extra value?

It is all due to factory efficiency. We built the whole car—chassis and body—under Bate efficiency methods. In a mammoth plant which was built and equipped to produce this one type economically.

These factory methods, introduced by John W. Bate, save us millions of dollars per year. And that saving pays for these extras.

See what these things mean to you. They are vital points in a car you buy to keep. If you do not know our nearest dealer, ask us for his name.

Mitchell SIXES

TWO SIZES

Mitchell—a roomy 7-passenger Six, with 127-inch wheelbase and a highly developed 48-horsepower motor.

$1525

Four-Passenger Roadster, $1560. Sedan, $2240. Cabriolet, $1960. Coupe, $2060.

Also Town Car and Limousine

Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor. ¼-inch smaller bore.

$1250

All Prices f. o. b. Racine

MITCHELL MOTORS COMPANY, Inc., Racine, Wis., U. S. A.

HOW do you know the wind is off the meadow?

"Your Nose Knows"

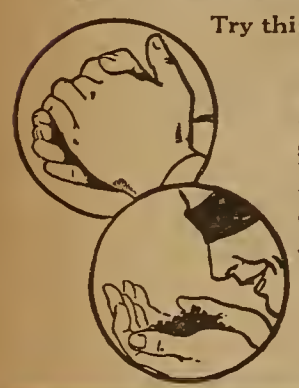
by the *fragrance.* Fragrance is Nature's most perfect expression of goodness—perfect because it appeals to you personally and is *infallible.* There is a definite personal appeal in the *pure fragrance* of the best tobacco—an appeal that carries Nature's guarantee of infallible goodness—and "Your Nose Knows."

Such an appeal you will always find in

Tuxedo

The Perfect Tobacco

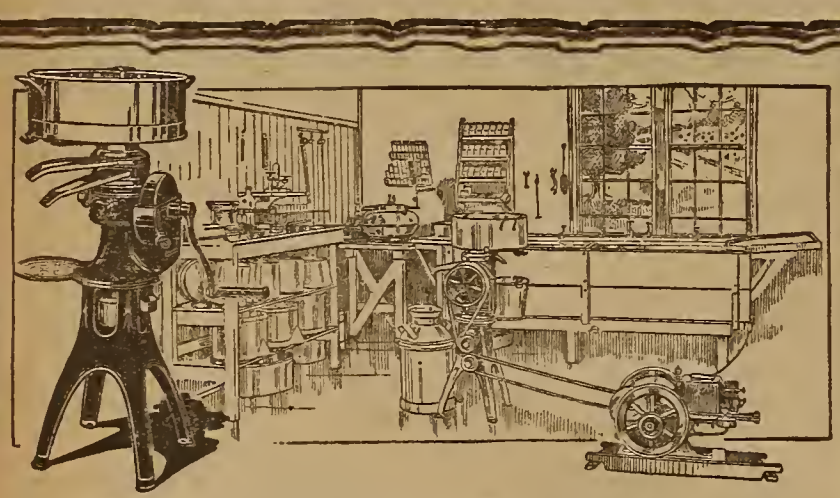
Made of the most *fragrant* leaves of the tobacco plant—the tender Burley leaves, ripened in the Blue Grass sunshine of Old Kentucky—Tuxedo has a *pure fragrance* all its own—"Your Nose Knows."



Try this Test: Rub a little Tuxedo briskly in the palm of your hand to bring out its full aroma. Then smell it deep—its delicious, *pure fragrance* will convince you. Try this test with any other tobacco and we will let Tuxedo stand or fall on your judgment—

"Your Nose Knows"

Guaranteed by The American Tobacco Co.



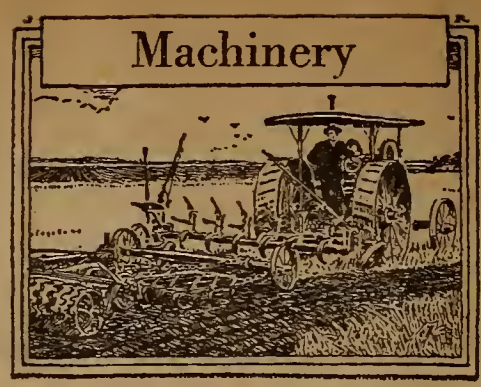
Close Skimming—Long Service

YOU find both the farmer and the housewife, after many seasons of experience with the **Lily** or **Primrose,** ready to sing the praises of these good cream separators of which we are proud. If you have to be shown, write us for all kinds of proof. Also ask any farmer or housewife who has used these machines.

The reasons for this popularity—boiled down—are that **Lily** and **Primrose** separators separate all your cream from your skim milk, and do it for years, always keeping up to the same level of close skimming, run with surprising smoothness and ease, and are very easy to keep in clean, sanitary condition. Across the double center of our **Lily** catalogue and our **Primrose** catalogue is a large, clear picture showing the working interior of these separators, explaining and indicating by arrows why they save you so much cream money. These catalogues are complete, fully illustrated, and very interesting and instructive, if we do say so ourselves.

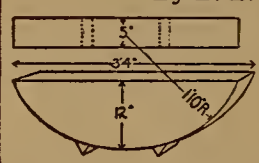
Choosing the right separator in these days of high prices is so important a matter that the careful farmer and dairyman will sidestep risk by putting his trust in a good, reliable, tried-out and proved Harvester product—a **Lily** or a **Primrose.** Do you know the dealer? If you are not sure, write us.

International Harvester Company of America
(Incorporated)
CHICAGO U S A
Champion Deering McCormick Milwaukee Osborne



Wash Wheels Easily

By B. L. Lambert



NOT having a satisfactory means of supplying water under pressure for washing carriages, we devised the pan shown in the sketch to aid us in removing dirt from the wheels. By means of this pan the spokes and rims, which are hard to clean without water under pressure, can be quickly washed.

The pan was made by a local tinner from heavy-gauge galvanized sheet iron at a cost of $2.25. It is wide enough to accommodate any wagon wheel. This pan is handy to move about and put under a wheel, and yet strong enough to stand considerable rough usage.

Much less water is required to wash a wheel with this pan, and hardened mud and dirt can be removed with less danger of scratching the paint or varnish.

Durable Bearings

By Carlton Fisher

JUDGING from information received from tractor users, the matter of bearings is fully as important as the style of tractor and the power of its engine. The bearings in a piece of power machinery correspond to the joints in anatomy of horses.

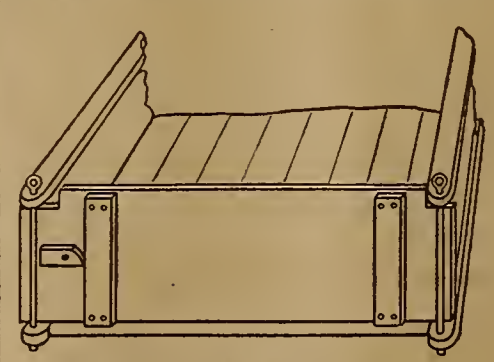
Durability, liberal size, and provision for positive lubrication—these are matters which experience has shown will insure the most continuous tractor service and general satisfaction during busy times.

Sliding Tailboard

By Chas. Edw. Richardson

ONE is likely to lose the iron stake or pin that is used to hold the tailboard of most carts. The tendency is to put it down some place after taking it out to remove the tailboard, and forget it. While I acknowledge that this was more or less of a habit with me, causing me to lose much time and patience, I have learned that other farmers are prone to do likewise. Therefore, as Mark Twain once stated, "If necessity is the mother of invention, laziness is the father," so I rigged up a scheme for a tailboard that has done away with the trouble mentioned.

I took off the tailboard cleats which were near the ends, and placed them in toward the center so they would be at least six inches from the ends. Then, at the left-hand side I cut out a piece at the top big enough to allow the tailboard to slide toward the left and allow the right-hand end to slip out from the stake.



The tailboard rods need not be removed, and consequently cannot be mislaid

To put the board back, place the left-hand end in behind the stake; then the right-hand end can be pushed in place. To hold the board from falling out, place a wooden button next to brace, as shown in the sketch. If the button is made angular at the end nearest the brace, it will not turn out of place when the wagon is moving. Or a nail or screw may be placed underneath to hold it, if preferred.

Tractors Encourage Drainage

By Raymond Olney

IT IS anything but a pleasant experience, when working on plowed or stubble ground with a tractor, to feel the machine stop though the drivers keep on turning, and at the same time begin digging holes for themselves.

I had this experience several times one spring while putting in small grain crops of oats and wheat with a heavy tractor. Parts of the farm were cut up considerably with treacherous sloughs, and the fields contained many wet spots. To wait until these spots had dried up sufficiently, before going into the fields, would have delayed spring operations too long.

As far as appearance was concerned, it was not possible to tell the location of the wet spots, but when we tried to cross them with the tractor there was no mistake about where they were. The first indication that we had reached one was the slowing down of the outfit, though the driver wheels kept on turning.

The first thing we did in such a case was to unhitch the tractor from the rest of the outfit and drive onto drier land and pull the implements across by a long chain or cable.

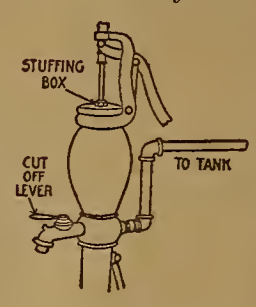
Means Earlier Seeding

This experience showed me the absolute necessity of proper drainage for fields containing wet spots, if a tractor is to be used to advantage. The improved crop yields from such land made possible by having soil conditions more favorable and by getting the crops in at the right time, together with the time and labor saved, soon offset the cost of installing a drainage system.

I recently had a letter from a Hancock County, Ohio, farmer on this question, in which he says: "I am well aware, from my own experience, that with the purchase of a farm tractor a more thorough drainage system on the farm is bound to follow. This not only means that with fields properly drained we are able to do the work faster, but also to do better work. And with thorough drainage it means increased crop production, deeper tillage, and mellower soil conditions. This idea has been uppermost in my mind ever since the employment of the tractor upon our fields. We must have all fields drained properly so that plowing and preparation of the seed bed can go on uninterrupted at any time."

Pipe Connection for Pump

By Wm. R. Taylor



MY WELL pump is fitted with a lever cut-off in the spout. By means of it I can control the water and either draw at spout or turn to stock tank. As the tank is close by, I do not use an underground pipe, but connect direct to back outlet of pump. At first thought one would think some kind of a cut-off would be necessary in the back outlet pipe.

Here is the way to get along without the second cut-off and have the water go automatically to the tank when cut-off in spout is closed:

First remove the screw plug from back outlet of pump and turn in a short nipple. To this attach an elbow, and leave the opening on the upper side. Into this screw a piece of pipe about nine inches long, and above it turn on another elbow. Leave the opening toward tank, and attach sufficient pipe to reach tank.

By raising the back outlet with the two elbows and vertical piece of pipe, the water will all flow from spout when the cut-off is opened, and will all flow to tank when it is closed.

Move Stove with Broom

By John T. Timmons

MOVING a stove from one part of the house to another is usually a difficult job. Backs are made lame, floors scratched, and quite often extra help has to be secured. These and other annoyances cause most persons to dread the moving of even a small stove from one part of a room to another part.

Here is a method so simple that you will always use it when once tried:

Remove legs from the stove and lower carefully to the floor, where a broom has been placed under the stove. See that it is balanced on the broom.

While one person drags the broom by the handle, another should steady the stove, to prevent tipping to one side. It will be found very easily moved.

The broom slides very easily, as there is no friction except between broom and floor, and there should be no marks at all.

Heavy boxes, trunks, and furniture can be moved in the same manner with one or more brooms properly placed beneath to be slid along the floor.

EW

American Royal Stock Show

By James Blaine

THE American Royal Live-Stock Show will be held in Kansas City, Missouri, October 1st to 6th, inclusive. This year's show will be purely a show of the four leading beef breeds of America—namely, Hereford, Shorthorns, Aberdeen Angus, and Galloways.

On account of inadequate space at Convention Hall the show will be held at Electric Park. There will be a horse show several nights, in connection with the American Royal, probably under the auspices of the Parkview Riding Club, Kansas City, consisting of light harness and saddle events. The management is arranging for some other horse-show events, and everything points to a first-class horse show.

Space has also been provided for a poultry show, which will be under the management of Mr. V. H. Southard. Mr. Southard has employed three poultry judges of national reputation. Poultry exhibits from several state fairs will be entered in the poultry show at the American Royal.

Blackleg Serum

BLACKLEG serum instantly stops an outbreak of blackleg. Until recently there was no remedy for blackleg when once it attacked an animal, and the only useful procedure was to vaccinate the other animals of the herd. It takes from five to seven days for the vaccine to protect the animal. If there is blackleg in your herd, a number of the animals may die in this time, as there is usually some in the incubation period. If that is the case, vaccine will cause the disease to develop more rapidly. It is sometimes necessary to vaccinate two or three times before the trouble stops.

With blackleg serum the disease is instantly stopped and in some cases it is possible to cure the animals in the first stages of the disease. After using the serum it is perfectly safe to vaccinate the animals in three to five days with a strong dose of vaccine. Thus the animals will be protected after the effects of the serum have expired.

The serum has been used on more than 2,000 animals in herds in which animals were dying from blackleg. Not a single case has occurred after its use, although in some places several animals had died in the twelve hours preceding the use of the serum.

On one farm in two adjacent feed lots in which calves were dying in each, serum was given to those in one lot and no treatment to the others. There was no loss following the use of the serum, but two animals died in the other lot. After use of the serum there was no further trouble.

The serum can be used in any size dose with perfect safety. Only the clear part of the blood is used, and this is filtered through a germ-proof filter, and a small amount of chloroform is added as a preservative. The serum cannot produce abscesses for this reason. It has been given in doses of 500 cubic centimeters three days in succession, without bad results, to good beef calves weighing 325 to 450 pounds. As a protective measure, the doses used are 12 cubic centimeters for calves weighing up to 250 pounds; 20 cubic centimeters for calves from 250 to 450 pounds; 25 cubic centimeters for calves from 450 to 600 pounds; 25 to 40 cubic centimeters for calves more than 600 pounds. This makes the average from 15 to 40 cents an animal for ordinary treatment.

In case an animal is already sick the dose is increased from 250 to 500 cubic centimeters, depending on the size of the animal, and is repeated in doses of 150 to 250 cubic centimeters every six to twelve hours. It has not been necessary to use more than 1,000 cubic centimeters on any one animal. The treatment of animals already sick is not recommended unless the very early stages of the disease are found. This is possible only in a few cases. It is used if the animal is very valuable. The Kansas Station was the first experiment station to produce the serum successfully.

Colt Shows

THERE is much talk of colt shows. Exhibitions will be held this fall at most places where colts were exhibited last year for public criticism. The colt-show idea takes a strong hold on a community, and its influence is felt for many months.

If the young colt is poorly formed, the interested owner is likely to realize the weakness long before time for the show. He may see the point in time to breed the mare to a better stallion this year, and so get in line for a more promising foal next year.

Here is where the greatest benefit of the colt show comes in. It drives home the fact that some sires are of little account, and that others may be depended upon to get colts which one is glad to have people see and admire. Such a colt will bring a big price some day when a buyer wants him.

There is no occasion to make excuses for the inferior foal. Few scrub foals are accidents. A cheap mongrel mare and a cheap, ill-shaped stallion may be depended upon to produce cheap colts. One discreditable parent is bad enough.

On the other hand, the well-bred, handsome mare bred to the best sire of the desired type in the community is very sure to produce a foal worth good feeding, good care, and finally a high price. The well-bred foals are by far the most likely to meet expectations in the show ring or anywhere.

Jonah Day for Workhorses

MORE workhorses are sick on Monday than on any other day in the week. This is good evidence that something is often wrong with the method of feeding on Sunday. One form of illness to which workhorses are subject occurs so often just following the Sunday rest that it is popularly known as the Monday morning sickness. This trouble is noted most frequently in those cases where horses are working hard, require heavy feeding, and are given their regular feed on Sunday while they remain idle in the barn.

Another common disorder among workhorses on Sunday and Monday is colic. In most cases it is caused by heavy feeding while idle, but it may be caused by a cold, sloppy bran mash which is a sure trouble maker. A warm steamed bran mash to which a liberal amount of salt has been added is, on the other hand, beneficial.

When the horse is working hard, his Sunday feed should be of the same kind and quality which he receives on other days, but the grain portion of the ration should be reduced one half.

This Berkshire sow is doing her "bit" in the greater food-production movement by rearing nine husky pigs

Get Rid of Worms

Figure how much it's worth to you in dollars and cents to keep your hogs free from worms. Worms prevent thrift—retard growth—rob you of good, high-priced pork.

Dr. Hess Stock Tonic

Drives Out the Worms

and at the same time tones and conditions the system. It enables your hogs to be at their best—to do their best. You take no chances. My Stock Tonic is guaranteed. You buy it at an honest price, from my dealer in your town who will return your money if it does not do as claimed.

Why Pay the Peddler Twice My Price?

25-lb. Pail, $2.00; 100-lb. Drum, $6.50.

Except in the far West, South and Canada.
Smaller packages in proportion.

DR. HESS & CLARK, Ashland, Ohio

DR. HESS POULTRY PAN-A-CE-A will help your hens through the moult.

Dr. Hess Dip and Disinfectant Kills Hog Lice

APOLLO ROOFING

Insures greatest *resistance to rust and corrosion*, and best protection from fire and weather. Specially adapted to farm buildings.

Made from APOLLO-KEYSTONE Copper Steel Galvanized Sheets—highest quality sheets manufactured. The added Keystone indicates that Copper Steel is used. These sheets are also unexcelled for Silos, Tanks, Cisterns, Culverts, Sheds, etc. Sold by weight by leading dealers. Send for free "Better Buildings" booklet.

AMERICAN SHEET AND TIN PLATE COMPANY, Frick Bldg., Pittsburgh, Pa.

We guarantee that every subscriber will receive fair treatment from advertisers. It therefore pays you to mention Farm and Fireside in answering advertisements.

Feed the Fighters! Win the War!

Harvest the Crops! Save the Yields!

On the battlefields of France and Flanders the United States boys and the Canadian boys are fighting side by side to win for the World the freedom that Prussianism would destroy. While doing this they must be fed and every ounce of muscle that can be requisitioned must go into use to save this year's crop. A short harvest period requires the combined forces of the two countries in team work, such as the soldier boys in France and Flanders are demonstrating.

THE COMBINED FIGHTERS IN FRANCE AND FLANDERS AND THE COMBINED HARVESTERS IN AMERICA WILL BRING THE ALLIED VICTORY NEARER

A reciprocal arrangement for the use of farm workers has been perfected between the Department of the Interior of Canada and the Departments of Labor and Agriculture of the United States, under which it is proposed to permit the harvesters that are now engaged in the wheat fields of Oklahoma, Kansas, Iowa, North Dakota, South Dakota, Nebraska, Minnesota, and Wisconsin to move over into Canada, with the privilege of later returning to the United States, when the crops in the United States have been conserved, and help to save the enormous crops in Canada which by that time will be ready for harvesting.

HELP YOUR CANADIAN NEIGHBORS WHEN YOUR OWN CROP IS HARVESTED

Canada wants 40,000 Harvest Hands to take care of its

13 Million Acre Wheat Field

One cent a mile railway fare from the International Boundary line to destination and the same rate returning to the International Boundary. High wages, good board, comfortable lodgings.

An Identification Card issued at the boundary by a Canadian Immigration Officer will guarantee no trouble in returning to the United States.

AS SOON AS YOUR OWN HARVEST IS SAVED, move northward and assist your Canadian neighbor in harvesting his; in this way do your bit in helping "Win the War."

For particulars as to routes, identification cards and place where employment may be had, apply to Superintendent of Immigration, Ottawa, Canada, or to

M. V. McINNES, 178 Jefferson Ave., DETROIT, MICH. } CANADIAN GOVERNMENT AGENTS { W. S. NETHERY, Interurban Bldg., COLUMBUS, OHIO

CHANDLER SIX

Do You Know Why Chandler Leads All Other High-Grade Sixes?

Do you know why the Chandler has passed and left behind, in four years' time, a long line of other well-known cars?

Back in 1914 men were very generally inclined to recognize that the Chandler was the right car at the right price and about two thousand of them had the courage to make sure of their convictions.

Those two thousand won thousands more to their convictions, so that in the year following nearly seven thousand men chose the Chandler for their car.

And the car went on making friends by its performance in the hands of these owners.

So last year, 1916, it was hardly surprising to those who really knew the Chandler that more than thirteen thousand motorists chose this car for their car, more than twice as many as had chosen it the year before.

And now comes 1917, a year of some stress for all trades, a year above all years when the real worth in merchandise counts most. And what is the motoring public's answer in its discussion of high-grade cars? What is its answer in discussion of Sixes most particularly?

From coast to coast as far as our available records show, the Chandler is preferred above all other medium-priced cars, above all other high-grade cars.

Our own sales records show an increase of better than 55% in the first six months of this year as compared with the first six months of last year.

Records of registration of new cars, although available in only a few typical sections of the United States, indicate a tremendous public preference for the Chandler over all other cars in its field, in some instances as much as a two-to-one preference.

In the great markets where men have the choice of all makes of cars, where every kind and type of car is represented, sold and owned, motorists indicate their preference for the Chandler, and prove their confidence in the Chandler, by choosing the Chandler.

We would like to show you what it means in satisfactory road performance that the Chandler motor is equipped with Bosch High Tension Magneto, as is the Pierce-Arrow, Marmon, Locomobile, Winton, White, Stutz and the Mercer; what it means to you that the Chandler car is built with a big solid cast aluminum crank case extending from frame to frame and giving absolute rigidity to the motor mounting; that it is equipped with silent chains for driving the motor shafts and with annular ball bearings in transmission and differential and rear wheels.

We would like to show you what these items of design and equipment and many others, typical of the highest priced high-grade cars, mean to Chandler performance.

Choose the Chandler for Your Car

FIVE BEAUTIFUL BODY TYPES

Seven-Passenger Touring Car, $1595 *Four-Passenger Roadster, $1595*

(Prices F. O. B. Cleveland)

Dealers in All Principal Cities and Hundreds of Towns. Write for Catalog Today.

CHANDLER MOTOR CAR COMPANY, Dept.DD, Cleveland, O.

FARM and FIRESIDE

The National Farm Paper

Established 1877

Advertising Rates

Agate Line, Both Editions	$2.75	Half Page, Both Editions	$1,100.00
" " Western Edition	1.50	" " Western Edition	600.00
" " Eastern Edition	1.25	" " Eastern Edition	500.00
Quarter Page, Both Editions	$550.00	Full Page, Both Editions	$2,200.00
" " Western Edition	300.00	" " Western Edition	1,200.00
" " Eastern Edition	250.00	" " Eastern Edition	1,000.00

Double Spread, Both Editions, Black and White $4,400.00

Double Spread, Both Editions, Black and Tint $4,450.00

3% Discount for Cash

Cover positions and special positions sold at page rate for both editions only, and not subject to cancellation.
Forms close three weeks before publication date.
Orders stipulating position other than preferred not accepted.
Single column, width, 2¼ inches; double column, width, 4⅝ inches; triple column, width, 7⅛ inches; four columns, width, 9¾ inches.
Column length, 200 lines; four columns to a page.
Closing date, Saturday, three weeks before publication.

Farm and Fireside

N. Y. Office, 381 Fourth Ave., New York SPRINGFIELD, OHIO Chicago Office, 1316 Tribune Bldg., Chicago

Chain for Tree-Bracing

By F. J. Kelleher

I FIND that a chain is the best type of brace to use in bracing limbs, as it can be easily put in place, and allows for swaying in the wind. Heavy bolts which screw into the wood and have instead of a head a hook over which a link of the chain may be looped are very satisfactory for securing the chain to the limbs. In bracing it is important that the chain be placed at the proper angle in order to hold the limbs in place. For example, if one of the two limbs to be braced extends upright, or more in a vertical position, and the other outward, or more in a horizontal position, in order to get the proper support the chain should be placed higher up on the vertical limb. The bolts are put in place by first starting a hole with an auger and then twisting the bolt in with a wrench. In this way the bolts do not split the wood. The limbs are then

drawn together by means of a rope until they are in the position desired, and the chain is cut the required length. The last link on either end should loop over the bolt hook and leave the chain perfectly taut. Remove the rope and the job is complete.

Saving Pumpkin-Pie "Timber"

By Miss E. Bell

PUMPKIN growers generally put away two or three barrels of the finest specimens for family use for pie-making, expecting about half will decay, which is a waste of good foodstuff. It now behooves each one of us to do what we can to preserve what we can get with so little effort.

I have successfully used the following easy method of saving pumpkin with much satisfaction:

Peel and slice the pumpkin, and boil until it becomes soft, then mash and put it through a colander. Then allow it to dry gradually on the back of the stove or about the fire on temporary racks. Window screens slung above the stove will answer well to hold the pans. The pumpkin must dry fast enough to prevent its souring, and must not be allowed to scorch. The cakes of pumpkin should be turned often until it becomes thoroughly hard. Then place the cakes of pumpkin in jars, and cover with cheesecloth to allow the air to enter the jars easily, and store in a dry place.

When needed for pies, soak the dry cakes in boiling water and proceed as usual. By making use of this plan of drying, a number of pans of pumpkin can be practically finished while doing the week's baking.

Did You Have Cutworms

By S. Thorne

TO REPORT that your garden is badly damaged by cutworms is to admit that you allow the weeds to get the best of you. Where gardens are kept free of weeds each year right up to the end of the growing season, and the garden is then fall plowed, the cutworms stand scarcely any chance of perpetuating their race.

EVEN less than 100 asparagus plants will supply a good-sized family after the bed has got into full production by the third year.

Back to the Land

When a City Man Tackled the Cultivation of a Run-down Farm

By PHILIP L. SHARP

The land has gone way up in value since I bought it, due largely to the improvements upon it and surrounding farms, and to the fine social atmosphere of the community

MY WIFE and I both wanted to live in the country. We had three children, two boys and a girl. None of them were strong, and we felt sure that outdoor work and play would be helpful to them. My wife, though born on a farm, had lived in the city all her life. I had been brought up on a farm, studied law, and had been practicing in the city for several years, but I found myself turning more and more toward the country.

This was the reason I bought Dale Farm, several miles out of the city where we lived in Dane County, Wisconsin. It consisted of 57 run-down acres, rough and full of pot holes, and had been yielding $50 a year rent to the owner when he had been fortunate enough to rent it. Constant planting to grain alone (mostly wheat), without any return to the soil, had reduced the productivity to a minimum, and the land was badly washed and cut by deep gullies. A good deal of the farm was never plowed or cropped, because it was too rough.

My father came down and looked it over, and left with the remark: "To think of my son, brought up on one of the best farms in the county, buying up the worst!"

The place had no frontage on the highway, no buildings, and practically no fences, but it had a beautiful view of the lake near-by, which gave it some speculative value.

Well, I agreed to pay $3,500 for the land, and paid $5 down, $495 in sixty days, the rest in deferred payments. I found a tenant to take charge on half shares, operating the farm from a rented set of buildings on an adjoining farm.

Up-Hill Work at First

We started with 8 cows averaging $35 a head, 7 hogs, 72 chickens, 2 turkeys. The share man owned half, and I owned half, and he also furnished horses and machinery. The first year we plowed in the gullies, raised some grain, used part of the land for pasture, and seeded down a portion in order to seed over the gullies and prevent the wash that was ruining the land. I bought the farm in fall, and before spring had a lot of manure, which I got for the hauling, spread over parts I intended to cultivate. We rented a few adjoining acres on which to raise corn for the stock. At the end of the first year, by means of careful planning, the inventory on the farm was $452.50, and my share of the profits was $355.74 in cash.

The second season my tenant was a young man who was taking a short course in agriculture at the university. Because of the lovely view of the lake from certain sections of the farm, I was able to sell a small part of it at a great advantage in residence lots, and immediately made a purchase of a small adjoining tract which gave me a set of buildings and also brought me to the highway. The buildings included a dairy barn large enough to house 20 cows, and I had this made fairly modern and sanitary.

The tenant cultivated the land about the same as the first year, and again we rented a small tract for raising corn, since we did not think the land was sufficiently rich for that yet. The cows were fed bran, other grain, and concentrates, which made good fertilizer, and we kept adding this to the land and bringing up its productivity. This year I built a silo, the first in that section. My share of the profits the second year was $521.35.

During the first years the farm improved wonderfully. The only thing that disheartened me was that each year I had to find new tenants, and they were not easy to find, either. The second year I moved my family out to an adjoining farm, which I have since bought, and it was only then that I began to see why tenants refused to take more than a one-year lease and always moved the minute it terminated.

The Community Gets Together

The road to town was miserable, the school was poor, there was no church, and absolutely no social life in the community. The bad roads kept us from getting the most from the sale of milk because delivery in town was so difficult. We were selling the milk at $1.25 a hundred when we might have got seven cents a quart if it were delivered to milk customers in town. Of course it was impossible to get a high-class dairy tenant on the farm under the circumstances.

I first saw to it that conditions on the farm were as good as I could make them. I put up a first-class milk house with an up-to-date milk-cooling system, cream separator, etc. Then I began to work on the road problem. I used all the influence I had on the county commissioners and talked roads every time I met a neighbor. The result was that the long-neglected district began to get its due. Automobiles were beginning to come in, and the farmers did not object as much as they formerly did to road taxes.

About this time I received a letter from a prospective tenant, a good dairy farmer, and one that I wanted very much to close a deal with. He said he would be willing to try the place if there were a Sunday school in the community, but he could not ask his wife to move into a neighborhood where there was no opportunity for religious instruction for their children.

The members of the school board were opposed to having the building used for a Sunday school, and most of the people in the community were indifferent, but they finally voted to permit the schoolhouse to be used on Sundays, provided it was left in proper order after the close of the meeting.

My tenant moved on to the farm with his family, and proved to be one of the best I have ever had. The first Sunday we had seventeen people at the school, and this number increased Sunday by Sunday until finally every family in that community had a representative there, including the families of the school board who were so bitterly opposed to it at first. I did not think it fair to use the school fuel to heat the schoolhouse, when the meetings had been begun for me, and so I brought wood each Sunday in the back of my buggy or sleigh.

This went on for some time. Then one of the school board sent word that since his wife and children enjoyed the service he thought he might be allowed to help, and he offered a cord of wood, and other neighbors offered to pay for having it cut up.

Co-operation Brings Success

The Sunday school developed at last into a sort of civic association. The farmers began to get their own automobiles and drive to town to church, and our neighborhood meetings changed their character. One of the things the community took hold of was the school. From being a fearfully backward little country school it has become known throughout the State as a pioneer in modern methods.

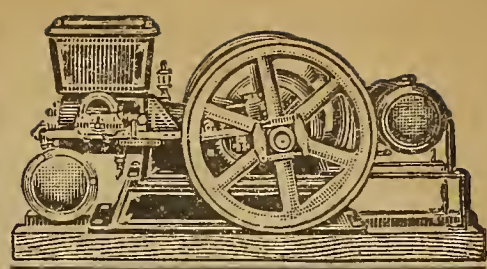
The change in the spirit of that neighborhood, the making of a social community with a good school and church interest, good roads, and lectures and music made all the difference in the world. I haven't had any trouble keeping tenants or getting them. Of late, they all stay until they save enough to start in on a farm of their own.

The land has gone way up in value since I bought it, due largely to the improvements on the place itself and those around it, and to the fine social atmosphere in the community. In 1913 my share of the net receipts was $1,149.09; in 1914 it was $1,276; in 1915, $1,340.58; in 1916, $1,858.16. I see no reason whatever why they should not increase this year also.

We have had the "worst farm in the county" for twelve years now. I with my family live on an adjoining place, which we have bought and are also operating on the tenant plan. My eldest son is a fine farm laborer, and he now attends the state university, taking agriculture. The younger boy and girl like the country and can do almost anything on the farm that any young people of their age can. They are never sick, are self-reliant, and, above all, are contented. My wife is the best farmer of all. She keeps up her clubs and her social relations in town, but she likes her garden and her chickens and is an expert manager.

When people ask us whether we think "back to the land" for the city man pays, we say in our case emphatically, "Yes!"

The Sunday school developed into an informal civic association



Full Year to Pay

Yes—spread your payments over a year. That is the offer made and backed by a $12,000,000 concern on the famous "Majestic" Engine. We take all the risk. Try it free for 30 days before you decide. No money in advance, no deposit, no C. O. D. You know we could send only an engine of the very highest quality on such an offer as this.

The Wonderful "Majestic" On 30 Days' Free Trial

Uses either gasoline or kerosene. Water cooled by open jacket hopper-cooled system. Bed and cylinder cast in one piece giving greatest possible solidity. Perfect lubrication. Most power at lowest cost. Made in 2, 3, 5, 7, 9 and 14 H. P. L. M. Massey, Del., says: "Develops more power than you claim." W. E. Gregor, Col., says: "Easiest running engine in neighborhood."

Pay Nothing For 60 Days

Prove before you pay a penny that the famous "Majestic" is the strongest, most economical, easiest to operate, and most powerful engine for its rated H. P. Then return it if it isn't the most satisfactory engine you ever saw. If you keep it, make first small payment in 60 days. Balance in equal payments 60 days apart.

Send for Free Book

Tells all about engines. Shows you how to buy on money-saving basis. Also explains our 30 days free trial, no money in advance, year to pay offer. Don't miss this. The book is free. Send postal or letter for it today.

THE HARTMAN CO.
4039 LaSalle St., Dept. 936 Chicago

KEROSENE ENGINES
OTTAWA LATEST DESIGN

Durable, Powerful, Reliable, Massive. Built to last; to do hard, heavy work. Uses Cheapest Fuel. Pulls 25 to 50 per cent over rated H-P. *3 Months Trial. Easy Terms.* Sizes 1¼ to 22 H-P. Easy to Start. No cranking. No batteries. 10-Year Guarantee. Most practical engine ever built. Engine book free. A Postal brings it. Write today.
THE OTTAWA MANUFACTURING COMPANY,
1151 King Street, Ottawa, Kansas.

DU PONT AMERICAN INDUSTRIES

IS THE ENEMY ON YOUR FARM?

This is a war of endurance. Men and money are important but—*food counts most.* Soldiers who fight must eat. So must their dependents at home. The world must be fed.

Every idle acre of reclaimable land on your farm aids the enemy. Every acre of untilled soil deprives many needy mouths of food.

The sinking of each food ship is a disaster, but the idle acres of America could grow more food per year than all of the enemy's submarines can destroy.

Fight the enemy now, with

DU PONT

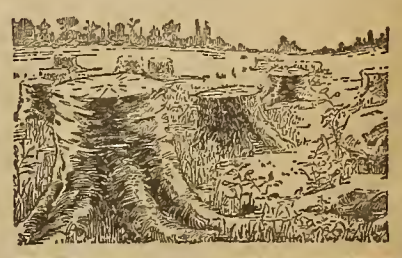
RED CROSS FARM POWDER

It is the most efficient reclaimer of cut over, boulder strewn or swamp land. It helps to solve the labor problem, enables one man to do the work of many and does it better and quicker.

Get our big book free

Learn the facts on farming with Farm Powder—the safe, quick and efficient method. Send today for your copy of

The Giant Laborer No. 90-F
E. I. du Pont de Nemours & Co.
Wilmington, Delaware



Oliver the Choice at Fremont

At the National tractor demonstration at Fremont, Oliver tractor plows and other Oliver products were drawn by forty-two different tractors. The same reason that caused sixty-five per cent of the tractor manufacturers not making plows to pull Oliver products in order to secure the best results from their tractors is the reason why you should insist upon an Oliver implement for use with your tractor.

Oliver tractor plows are furnished with two, three or four bottoms for light tractor use; in larger sizes for heavy tractors.

The Oliver tractor disk harrow and roller pulverizer are especially adapted for tractor hitch.

Tell your plowing needs to the nearest Oliver dealer or write us for information on the plow best adapted to meet them.

Oliver Chilled Plow Works
Plowmakers for the World
South Bend, Ind.

Send for Catalog

FARM WAGONS
High or low wheels—steel or wood—wide or narrow tires. Wagon parts of all kinds. Wheels to fit any running gear. Catalog illustrated in colors free.
Electric Wheel Co., 13 Elm St., Quincy, Ill.

Only $2 Down
One Year to Pay!
$29 Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.
ALBAUGH-DOVER CO. (12)
2139 Marshall Blvd. CHICAGO
100,000 now in use

SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN – Keeping IN OIL

SPLASH OILING SYSTEM
OIL SUPPLY REPLENISHED ONLY ONCE A YEAR
Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear
DOUBLE GEARS — Each Carrying Half the Load
Every feature desirable in a windmill in the AUTO-OILED AERMOTOR
Gasoline Engines — Pumps — Tanks
Water Supply Goods — Steel Frame Saws
WRITE AERMOTOR CO. 2500 12TH ST., CHICAGO

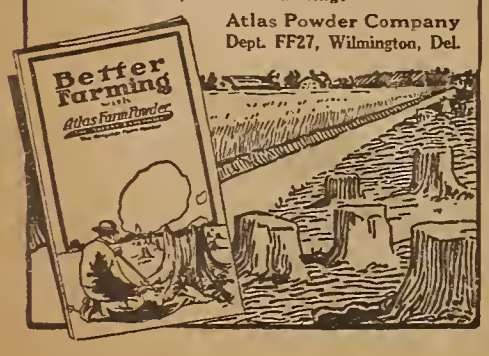
Free Book Tells How

you can break stumps to bits, shatter big boulders, make deep ditches, prepare tree beds, blast the subsoil, and how you can do many other kinds of farm work at a saving of time, labor and money by using

Atlas Farm Powder
THE SAFEST EXPLOSIVE
The Original Farm Powder

made especially for agricultural work and sold by dealers everywhere. Write today for 74-page, illustrated book, "Better Farming."

Atlas Powder Company
Dept. FF27, Wilmington, Del.



Crops and Soils

Full Value from Manure

By M. Baird

THE manure should be hauled out and put on the soil as soon after being formed as convenient, the sooner the better. If manure is allowed to stand as long as six months it loses more than 60 per cent of its plant-food value.

There are several ways in which the food value may be lost. Some of it is lost by leaching. For example, when a manure pile is placed under the eaves of a barn, water passes through it, and there is waste. The liquid excrement, which contains more than half the food value, may seep out of the manure and be lost when it is allowed to stand. A large amount of the organic matter is destroyed by oxidation if the manure is allowed to stand long.

One may get the full value of the manure if he will only take precautions which prevent the losses mentioned. The manure may be thrown into a spreader and hauled to the field as soon as a spreaderful has accumulated. A shed-like roof large enough to protect the pile from the weather and so situated that water will not drain to and stand around it will prevent much loss in the value of manure.

The Advantages of a Pit

Manure may be stored in a manure pit situated conveniently near the barn. The pit need not be expensive. It may consist of a cement floor and cement sides two or more feet high. The dimensions of course will depend upon the amount of manure formed on the farm. Such a pit retains all the excrement, with small loss in food value. It need not be covered.

People should realize how great their loss is and then use some method to prevent such a loss. If one will get the manure to the soil without appreciable loss of plant-food value the fertilizing power will be double what it would be if the manure were allowed to stand.

Not only are many large stacks of manure accumulating on too large a number of farms, but some persons have invested in costly equipment in the way of tracks, trolleys, and sewers to dump the manure into adjacent creeks and rivers.

Such a practice is both dangerous and wasteful—dangerous because it pollutes the streams and shallow wells for the person farther down stream, forcing him to use impure water and making it easy for the spreading of contagious diseases; wasteful because plant food is being placed where it will be lost, instead of being returned to the soil which produced the plant. The time is not far distant when a person will hold in high regard his predecessor who conserved the available food supply of the farm both for himself and for posterity.

Spread the manure as it is found, and spread it evenly. Much of the manure distributed is put on the field too unevenly and too thickly. If spread too thickly it will "burn," and thus lose its nitrogen and have a harmful effect where it is put on growing crops.

When to Cut Trees

By Fred W. Hooper, Jr.

TREES should be cut in winter, as timber dries more slowly at this time of year and there is little danger of damage from season checking. Logs can be handled most economically in the winter months, as four times as many logs can be hauled on sleds as on wheels. If the logs or posts are cut in winter they become well seasoned before they are set, and proper seasoning is the most economical preservative treatment one can give to posts or poles.

All the great industrial organizations, such as railroads, telegraph, and telephone companies, that use enormous quantities of timber specify that it must be cut between October 1st and March 1st. Experience has shown that best results have been obtained by cutting the trees at this time.

Surface Run-off Depletes Soils

By John Coleman

SURFACE run-off is an important factor in the depletion of soils. The running-off of the surface water decreases the available water supply of the soil by removing from the field water which should be stored in the subsoil.

Plowing the soil early after wheat harvest and leaving the surface rough is a good method of storing the moisture in the soil. The use of a rotation is helpful because it changes the time and depth of a cultivated field. The organic content should be kept high by the addition of manure. This acts as a sponge in holding water, and also binds the soil particles together.

The steeper portions of the farm may be kept in grass or hay crops in order to prevent loss of the plant food and the soil moisture by washing.

Fields that are rolling and must be cultivated should be plowed in contours around the slope. When such fields are plowed up and down the slope, the furrows make drainage ways which may be eroded to a considerable depth in a short time.

Fields with broad, gentle slopes that have a tendency to erode from surface run-off may be improved by constructing one or more dikes on the slope. The dikes should run diagonal with the slope and be given just sufficient fall to carry surplus water.

Seed Bed a Big Essential

PEOPLE are beginning to realize that if they profit as they should through planting a high-yielding strain of wheat, it is necessary for them to provide a favorable place for it to grow. A preparation of a good seed bed cannot be overemphasized. It has much more to do with increasing yields than with the variety grown, and must be kept constantly in mind.

The soil needs to be plowed a little earlier in the season, to bring about the same favorable conditions for planting that once could be obtained by the mere scratching of the surface soil.

We need to give our land a rest from wheat once in a while, and plant it to some other crop like corn or alfalfa. We need to carry some live stock on the land and utilize as feed the roughage that now goes to waste on many farms.

By diversifying crops and maintaining a few head of live stock on each wheat farm, the wheat grower will furnish himself with profitable employment every working day in the year. Under the present prevailing system of growing wheat in many States, a man is out of a job about six months of every year. No other business would provide a man with even a decent living if conducted in this manner.

The preparation of a good seed bed cannot be overemphasized. It has much more to do with increasing wheat yi elds than the variety grown

BECOME A GAME FARMER
Write for these two books which tell all about this interesting and profitable work. "Game Farming for Profit and Pleasure" is sent free on request. It treats of the subject as a whole, describes the many game birds, tells of their food and habits, etc. "American Pheasant Breeding and Shooting" is sent on receipt of 10c in stamps. It is a complete manual on the subject.
HERCULES POWDER CO.
1032 Market Street
Wilmington Delaware

FERRETS FOR SALE—Either color, any size, singles, pairs or dozen lots. Catalogue free. C. H. KEEFER & CO., GREENWICH, O.

$ RAISE BELGIAN HARES FOR US.
Flemish Giants and New Zealands. Profits large. We supply stock and pay $3.00 each. Also Cavies, Squab Breeders and fur bearing animals. Instruction book and contract for time. None free.
Outdoor Enterprise Co., 73 Main St., Holmes Park, Mo.

SQUAB BOOK FREE
Make money breeding Squabs. 191. Markets highest on record. Start at once. Enlarge. We teach you how to sell best as well as how to raise. Write at once for this big free book to the founder of the squab industry. PLYMOUTH ROCK SQUAB CO., 503 HOWARD ST., MELROSE HIGHLANDS, MASSACHUSETTS.

RAISE BELGIAN HARES For Us
HUGE PROFITS easily, pleasantly made. We furnish stock and pay you $6.00 a pair and express charges for all you raise. Contract and book "Fortunes in Hares," 10c. Nothing free.
NATIONAL FOOD & FUR ASSOCIATION
Dept. 19 557 12th St., Milwaukee, Wisconsin

SICK BEASTS
BOOK on treatment of Horses, Cows, Sheep, Dogs and other animals, sent free. Humphreys' Homeopathic Veterinary Medicines, 156 William St., N. Y.

FARMERS HANDY WAGON
Low steel wheels, wide tires, make loading and handling easier. We furnish Steel Wheels to fit any axle, to carry any load. Plain or grooved tire. Catalogue sent free.
EMPIRE MFG.CO., 368, Quincy, Ill.

RAT CORN Kills Rats & Mice

FREE
Wonderful Money Saving Fence Book. Over 150 Styles. Gates-Steel Posts-Barb Wire 13¢ Per Rod Up
DIRECT FROM FACTORY-FREIGHT PAID
All heavy DOUBLE GALVANIZED WIRES. 13c per rod up. Get free Book and Sample to test.
THE BROWN FENCE & WIRE CO., Dept. 21 E, Cleveland, Ohio

Laymore
MAKES THE LAZY HEN LAY
"The Tale of a Lazy Hen" is the title of a new book, which tells how to make your hens lay every day in the year. Everybody, no matter if you raise one chicken or a thousand, should send for this FREE BOOK. *Write for it at once.* It's absolutely FREE.
Kelly · The Poultry Man
27-1 No. 2nd St. Minneapolis, Minn.

It is to your interest to mention Farm and Fireside in answering advertisements.

ABSORBINE STOPS LAMENESS
from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. It acts mildly but quickly and good results are lasting. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.00 a bottle delivered. Horse Book 9 M Free.
W. F. YOUNG, P.D.F., 23 Temple St., SPRINGFIELD, MASS.

A Kansas Garden Surplus

By Mrs. C. K. Turner

HERE at Pleasant View Farm we have always known the value of a good garden, and systematically plan to make it a success for home-consumption purposes. But until last summer we had never tried selling our overplus products, though we often gave such surplus to friends and neighbors. Our big boy has a mania for gardening, and takes pride in trying out new sorts and exhibiting results. This year he became imbued with the idea of raising things to sell, but John and I thought it wouldn't "pay" here. You see, we live just five miles out of a little village of some 500 or 600 inhabitants, where many raise their own gardens or have friends or relatives in the country who bring them in stuff. So there seemed to be little chance of profitable marketing along that line. But when things began going to waste I said, "I'm going to see what I can do." Accordingly I picked a few fine tomatoes, not too ripe, some tender stringless beans, a few ears of early corn, and selected a few medium-sized cabbages.

Then I said, "Hitch old Bess to the buggy and I'm off." I drove to the stores, but they were already overstocked, so I found what retail prices were and then drove to the house of an acquaintance. She seemed glad to purchase and directed me to other customers.

To make a long story short, the tabulated report below shows what was received for our surplus garden stuff after the middle of August by making ten trips to town, the income from which I divided with our big boy. I often stopped for a little visit with some of my patrons and really enjoyed the trips, which I usually made two forenoons of each week:

30 dozen ears corn	$2.15
538 pounds tomatoes	19.46
8 gallons snap beans	1.20
5 pounds rhubarb	.15
4 pounds cabbage	.12
13 cantaloupes	1.35
4 watermelons	.95
34 pounds sweet potatoes	1.97
Total	$27.35

Picking Chute for Fruit

By T. H. Linthicum

THE device for gathering fruit shown here is easily made and saves the trouble of passing the hand with every apple to the basket or other receptacle. This means that twice as much fruit may be gathered in a given time.

The receiver is made of stiff leather and is attached to the hand by straps that pass around the wrist, thumb, and little finger. A tube of light-weight canvas is riveted to the end of the receiver, and is strapped to the arm just below the elbow.

The fruit is gathered by the fingers and passes down the tube into a basket strapped to the picker, or the tube may extend to the ground, where an assistant catches and grades the fruit.

Saving Peas from Weevils

Mrs. L. E. Armour

WE HAVE got to the place where we feel it is poor business policy to risk losing our edible dried peas, beans, and corn by the depredations of weevils, after they are stored.

For small lots of a bushel or less of peas or other seeds to be treated, we find the hot-water treatment is less expensive, and there is no danger of explosions, as may occur with carbon-bisulphide treatment if one is unaccustomed to using it.

We merely put the dry peas or beans in porous bags, dip the bags into boiling water just long enough to heat all the kernels to nearly the boiling temperature. A couple of minutes in the water will do the trick if the water is boiling hot. Then immediately remove the bags from the water and spread the contents in the hot sun or over artificial heat to dry. The kernels should be spread out well so that the drying will proceed rapidly. This treatment will prevent the weevils' eggs from hatching, and will kill any insects that may have already hatched in the grain.

DID you have blight on your tomato vines this year, causing the leaves to turn yellow and fall and the fruit to wither and fall before mature, or to ripen while small? If you did, gather and burn every bit of stalks, stems, leaves, and refuse when the crop is harvested. Next spring choose other ground for tomatoes, and spray plants with Bordeaux every ten days.

E

If you never tasted Grape-Nuts FOOD you have missed one of the good things in life

You'll Keep on Buying

Durable-DURHAM Hosiery, the *family brand* of hosiery, because it g ves everybody so much extra long service and comfort.

DURABLE DURHAM HOSIERY

FOR MEN, WOMEN AND CHILDREN

Made Strongest Where the Wear is Hardest

The heels, soles and toes are strongly reinforced. The wide elastic, garter-tear-proof tops with the anti-run stitch are knit on *to stay*. The quality is uniform throughout, sizes correctly marked, and the legs are full length. The feet and toes are smooth, seamless and even. The famous Durham dyes prevent color from fading or turning green after wearing or washing. Durable-DURHAM Hosiery sells for 15, 19, 25 and 35 cents a pair.

Buy Durable-DURHAM Hosiery for the entire family.

Ask your dealer to show you our women's and men's 35c silk mercerized hosiery with the patented anti-run stitch.

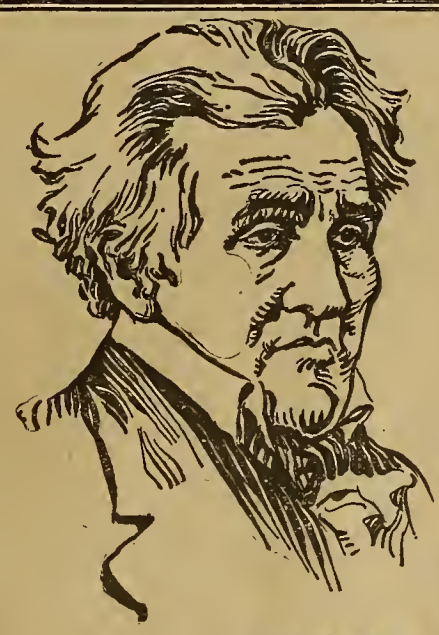
DURHAM HOSIERY MILLS, Durham, N. C.

YOU CAN MAKE BIG WAGES

BY REPRESENTING FARM AND FIRESIDE AT YOUR FAIR

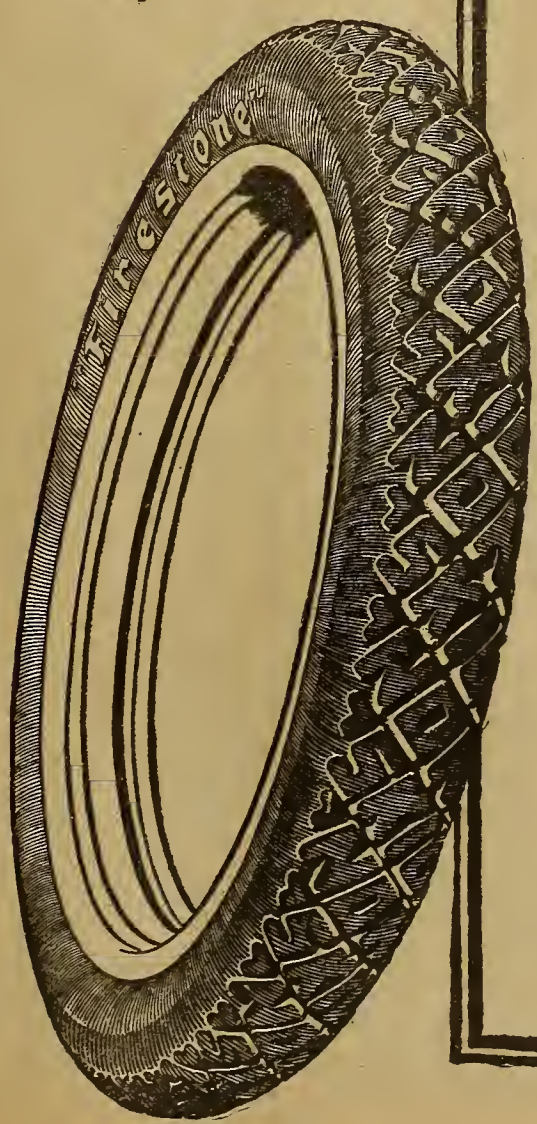
We have any number of men on our local agent list who make from $8 to $10 per day while attending their local county fairs. Write for particulars of our offer and mention fairs you want to attend. Address

Agents' Division FARM AND FIRESIDE Springfield, Ohio



"I Stand for Service to all the People."

Andrew Jackson



SERVICE to all the people as interpreted by the Firestone organization means building tires to carry any machine, pleasure car, truck or trailer, motorcycle or "bike" anywhere, any time. It means the service which shall do this with greatest saving and satisfaction.

The busy car-owner who has learned to rely on Firestone service finds that reliability a big factor in comfort, convenience and money saving. He depends on the tire as he would on any public service of proven character.

This confidence in Firestone character has been learned either by personal test, by observation, or by the endorsement of the motoring majority which is unquestionably for

Firestone

The Firestone factory is the pattern of the industry for advanced facilities and scientific methods. They give you Firestone quality at the cost of ordinary tires. Your dealer and the nearby Firestone Branch unite to give you efficient, economical service.

FIRESTONE TIRE AND RUBBER COMPANY

Akron, Ohio Branches and Dealers everywhere

Mayo is the only medium-priced underwear that's actually knit in the dollar way—10 ribs to the inch instead of 8.

10-Rib Knitting brings to Mayo Underwear added warmth and coziness. Turns men's winters into June. It's plain common sense to see that a closer-knit fabric is bound to be a warmer fabric.

Buy 10-rib Mayo Underwear for ease and comfort. For, truly, never did you feel before such easy stretch and "give" as comes from 10 ribs to the inch instead of 8.

And, yes! Buy 10-rib Mayo Underwear for economy. For 10 rib knitting *does* mean longer wear.

Get 10-rib Mayo Underwear before winter *gets you.*

Mayo
Made from Mayo Yarn
WINTER UNDERWEAR for MEN and BOYS

The only medium-priced underwear that's "actually knit in the dollar way".

Men's winter Shirts and Drawers
Men's winter Union Suits
Boys' winter Union Suits

All dealers either have or can quickly get for you 10-rib Mayo Underwear

THE MAYO MILLS, Mayodan, N. C.

GET THIS SUIT

made to your own measure. It won't cost you one single cent. We will give it to you so you can show it to your friends. It will be a big advertisement for us. You can easily make from **$35 to $50 EXTRA Every Week** and besides that be the best dressed man in your town. It's an opportunity you cannot afford to overlook. Even if you only want to order a suit for yourself, don't fail to

Write For Our Big Offer

Don't delay a minute. Drop us a line or send us your name on a postcard, and we will send you absolutely free, our wonderful style book, containing 64 beautiful samples to choose from. Write now.

The Progress Tailoring Co., Dept. 878 Chicago

$1.95 Made to Your Order

Special Offer to prove our fine quality: These fine Pants for Dress or Business, choice of many handsome styles, guaranteed for 18 months' solid wear and satisfaction or MONEY BACK, absolute $5.00 value—while they last, one pair to a customer. Express prepaid for only - - - **$1.95** PANTS

No Extra Charges

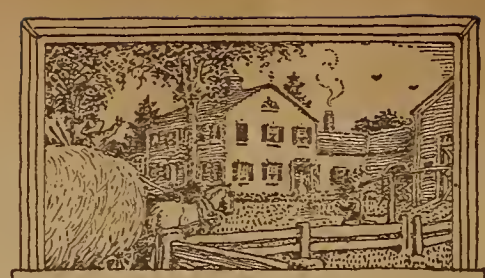
No charge for Big Extreme Peg Tops or Cuff Bottoms, nothing extra for fancy Belt Loops or Pocket Flaps, no charge for Open Welt Seams or Large Sizes—all novelty features FREE.

This **GOLD FINISHED PIN FREE** TO YOU

Classy lapel pin with your first order, only a few hundred on hand, get yours quick. Send No Money

Cash Profits to you for taking measures of relatives and neighbors. Young George Gekovich made $66.16 in one day. Write for free samples today.

Chicago Tailors Association
Dept. D-62 515 South Franklin Street, Chicago



Dairying

Domestic Roquefort Cheese

By B. D. Stockwell

"IS Roquefort cheese made in the United States, and can it be made from cows' milk as well as from sheep's milk?" These questions are asked by a Wisconsin reader.

The Government has been experimenting with the manufacture of Roquefort cheese for some time, and a satisfactory article has been made on a small scale, but the manufacture is not yet on a thoroughly commercial basis. Mr. Helmer Rabild, a specialist of the U. S. Dairy Division, has this to say on the subject:

"Imported Roquefort cheese is a product made from sheep's milk in the provinces of southern France. It is ripened in caves, and in this ripening process the moist condition of these caves and their proper ventilation by the winds are important factors. In taking up the question of making Roquefort cheese in this country from cows' milk our laboratory soon found that it was necessary to build a curing-room where such conditions as temperature, moisture, and ventilation would be under control. As a result of laboratory work a method was perfected for making Roquefort cheese from cows' milk. The problem is now in its second stage; that is, it is being tried out in a number of cheese factories under commercial conditions.

Hiring Dairy Herdsman

By Earl Rogers

SOME men who own a good-sized dairy can't be on the job themselves very much of the time. These men must depend upon a herdsman. I visit dairymen here in Ohio a great deal, and I can see how valuable a good man is to both a herd and its owner, and how harmful an incompetent one may be.

I have in mind now a herd of Jerseys which I first came to know a little more than three years ago. The herdsman in charge was just starting his work. He promised himself that he would have a straight Registry of Merit herd in three years. He took an interest in the work, and he liked Jerseys. At one time he was taking care of a herd of about thirty, three times a day. This meant that he had to be up as late as nine o'clock in the evening, and out in the barn every morning at four o'clock. He was always on time too, because he is a stickler for being on time.

I was on the farm again a few months later, and I could see the difference in the cows and the work in general. The Jerseys were a good deal more quiet than they had been when I first knew them. They were in better flesh, and were producing about 20 per cent more milk than they had before. The owner of the herd seldom came to the barn. He just depended upon this man. And the man knew that he was being depended upon, and he filled the job in every way.

Two years passed. Living was higher. The herdsman had a more expensive family, and the herd was worth more than ever. He asked for a raise. He had been getting $50 a month, with house and milk and the other helps that a farm man usually gets. The owner couldn't see it that way, and the herdsman rented a farm.

The next herdsman came along and was a good man, but he favored the Holsteins and didn't exactly fit on a Jersey farm. He left in about three months. The next one was a short-course man with some experience. He stayed a few weeks and went on. The herd was losing in milk, and different milkers and feeders made a difference in the cows' dispositions. The changing kept on for about ten months, and finally abortion started. No particular attention was paid to this, as each floating herdsman was not especially interested in the outcome. He was there for the time he was at work.

Well, after the herd lost in milk, and all these other things gradually began to show up, the owner began to see that there must be a reason. He dictated a letter to the original herdsman, who then lived in another State, and asked him what he would come back for and take entire charge of the cow end of the farm. The herdsman had struck a rather bad year, which was last year, and the farm didn't make what he expected, he replied that $75 a month would bring him back. The returning letter told him to come just as soon as he wanted to. In those ten months the owner saved $250 in wages. Most any cow in the herd was worth that when the first herdsman was on the job. Only a few of them were at the end of the ten months. It is hard to estimate the detrimental effect of even a sign of abortion in a herd, and this herd had a start. But the $250 was not all saved.

The books showed that extra help had to be hired for the same work that the first herdsman did alone. The entire bill was running about $115 a month. So in money there was no saving, and besides the work wasn't done so well.

This herdsman would have stayed for $10 more a month in the first place. And it would have paid him to stay. It would also have paid the owner. The owner sees it now. He also sees the cows picking up in milk. He sees that they are quieter and in better condition than they were a few months before. He sees where he lost a good deal of money, and the reputation of the herd must be built up again. It will build slowly, but it went down fast. He will have to watch and wait for the fight with abortion germs to be won, and that is no quick battle to win. And he will be a wiser owner than he ever has been.

That herdsman is going to earn that $75 a month just as much as he did the $50 which he first received, and he will be worth more than he is getting.

Machines Operate Anywhere

By Carlton Fisher

"CAN milking machines be installed in any barn," asks a Wisconsin reader, who adds that his buildings are not modern. This question may be answered in the affirmative, although the use of mechanical milkers is generally associated with the production of a high quality of milk, which naturally suggests up-to-date buildings.

Milking machines are usually installed so that the pipes which carry the suction are overhead and out of the way and yet within easy reach. The most convenient place for them is somewhere near the top of the stanchion. The piping and vacuum pump are practically all the mechanism required except, of course, the units which receive the milk, and they are portable. There are no architectural requirements for the installation of mechanical milkers. Whether the barn is square, oblong, round, or L-shaped, old-fashioned or modern, is immaterial as far as the operation of the machines are concerned.

The piping used for the operation of milking machines is for convenience placed near and generally slightly above the stanchions

Poultry-Raising

Pullet Cost to Egg Stage

By F. W. Orr

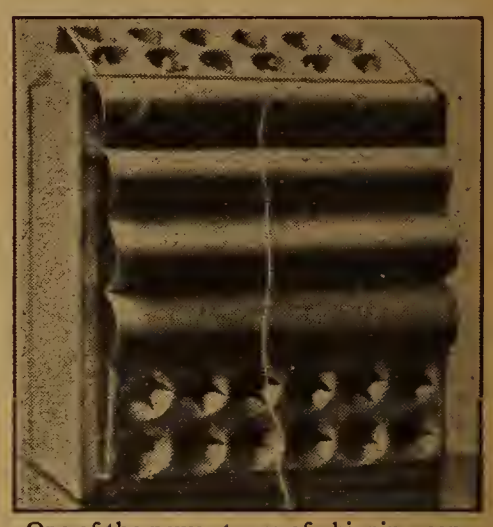
MR. C. N. WARNER, a New Jersey poultryman, who has raised many thousands of pullets to sell to commercial egg farms, believes that February hatched chicks can be raised to maturity for less cost than those hatched later. Here are some of his ideas on this subject:

"In the year 1915 I raised 3,000 February hatched chicks to the age of five and one-half months for 60 cents each, and estimate that the value of the chicks when hatched was 12 cents each. The same year the cost of raising the roosters to squab-broiler age—seven to eight weeks old, when they weighed 14 ounces each—was 44⅓ cents a bird. The broilers sold at 92 cents a pair. In 1916 the cost of raising the pullets jumped up to 97½ cents a bird, estimating the cost of chicks at 15 cents, feed 70 cents, interest, depreciation, and overhead charges, 2 cents. Labor, 10½ cents. Total, 97½ cents. His estimate for 1917 is $1.25 for each pullet raised to laying age.

Help Biddy Do Her Bit

By Vincent Lee

WITH all our speeding-up efforts to bring the farm up to the highest point of efficiency, let us not overlook doing something extra for the poultry of our land. It is right to grow more foodstuffs for the men and women of the world, but we must not forget that our hens will do their share only when conditions are made more favorable for them.



One of the newer types of shipping containers which keep every egg from contact with another

Thousands of poultry keepers have been reducing their poultry stock lately. They have done this chiefly for the reason that the cost of production is too high. All kinds of feed have advanced even faster than the price of eggs and poultry. When in winter prices rise to a point where a fair return is realized by the poultry keeper, we are face to face with a boycott.

Now what? We must raise more of our own feedstuffs, grown right at home on the farm. There is no better way of increasing the profitableness of our flocks than in just that way. Instead of depending on shipped-in grains and ground feed, we must raise these things ourselves.

Frustrating Chicken Thieves

By J. T. Raymond

GET ready for the chicken thieves. Theft losses last fall totaled hundreds of thousands of dollars. High poultry prices will cause thieves to be more numerous than ever this year. The time for action is before the thief's visit. Few stolen chickens are ever recovered, and thieves operating in a small way are seldom apprehended.

The best safeguard is not a loaded shotgun, set in the hen pen and pointed at the door, opening of which pulls the trigger. No poultry keeper wants to kill a man for the sake of a few chickens. And such contrivances are dangerous too. Every fall such "sets" hit some poultry keeper or a member of his family. There are safer and better ways than shooting.

E'

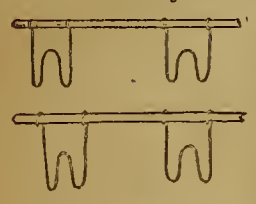
Protection against chicken thieves should be both individual and co-operative. By padlocking all doors, make ingress as difficult as possible through windows and fronts. Keep a good watchdog through the danger months. Dogs will not keep off all thieves, but they will help.

Poultry keepers should get together on this matter. They should raise a substantial fund, and post it for the detention or information leading to the detention of any person or persons found guilty of chicken thefts. Poultry associations can do no better work this fall. Publicity given the "Thief Fund" in the local press is a powerful preventive. This has been proved in a number of instances. Chicken thieves are petty criminals and can be frightened.

Some poultry keepers use burglar alarms. These are effective, and the cost is not great. One of the largest New England farms has a searchlight to help detect prowlers. Thieves seldom enter the confines of this farm. They have a wholesome fear of anything that will help bring them into court.

A Hold-Fast Picking Help

By G. L. Rothgeb



ON TWO farms that I have lately visited, where poultry is made to pay, I saw in use a No. 8 or 9 wire bent something like the shape of a W. Each of the lower parts of the W is just big enough to catch a hen's leg above the spread of the toes. The two places for the legs are about five inches apart, which makes the picking job easier than when the legs are close together.

The upper part of the wire should be shaped to fit or hook over anything that happens to be where you are working. If you work in a room a broomstick with two or three of these holders is good. If you work under a tree in the summer, then the top part will want to be made to hook over a limb easily.

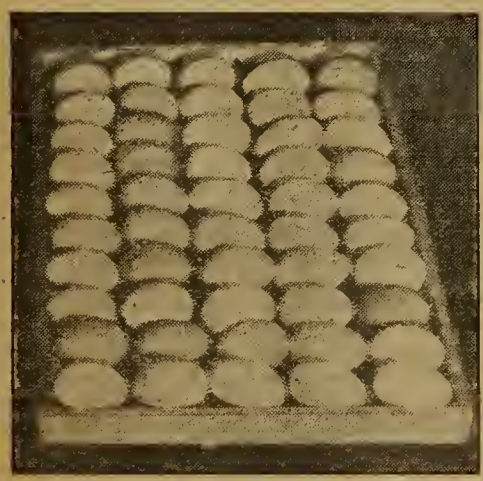
Buying Turkeys to Feed

By A. L. Roat

EVERY fall for a number of years I have bought about 200 turkey "feeders" and conditioned them for market just as some stockmen buy cattle and sheep "feeders" to finish for a prospective better market. In this section of country, near Philadelphia, turkeys are shipped north from the Southern States a short time before Thanksgiving, but those who buy these turkeys for feeding so late in the season seldom make any profit worth while. The sudden change in climate puts them out of condition.

My plan is to buy Virginia turkeys for feeding in September and give them range on stubble fields, thus getting a good growth and an excellent finish by putting them on a full grain feed three weeks before marketing.

By this plan of utilizing turkey "feeders" to clean up the stubble fields of grain that would otherwise be wasted, I convert the scattered grain into a high-priced product when there is the best poultry market of the season.

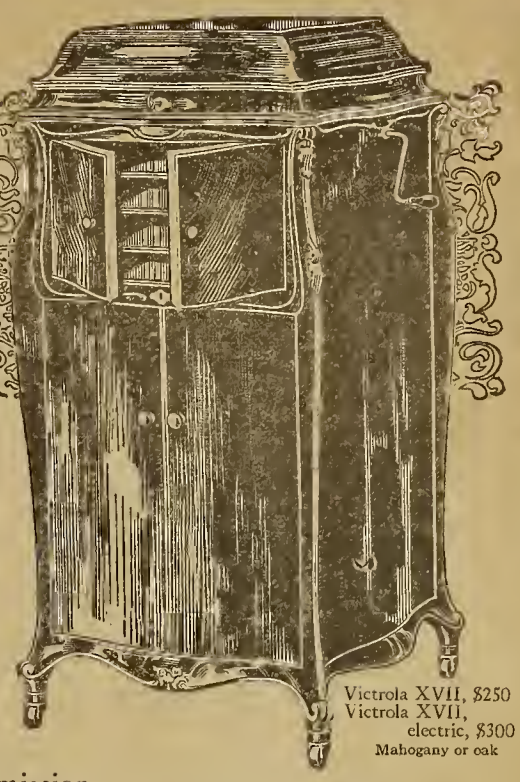


Correctly graded, these eggs taken from a retailer's supply would sell for three to five cents the dozen higher than the mixture shown

ALLOWING chicks to sleep crowded together on the floor after they are feathered and fit for roosting is a sure way of adding to the cost of raising them. The overheating and conditions favorable for the multiplying of vermin keep the chicks restless and unthrifty.

BEFORE the cockerels get too much developed, plan to get them confined together so that they will find which are the bosses. After they get well matured they will fight to a finish and injure one another seriously before finding out which are the masters.

E



Victrola XVII, $250
Victrola XVII, electric, $300
Mahogany or oak

Victrola-the highest attainment in the arts of sound

The mission of the Victrola is purely one of transmission. The recorder and reproducer should tell the simple truth, no more, no less.

The Victrola is not an instrument in which the interpretation and expression depend on the player like the organ, piano, etc. No instrument can be made to *improve* on Melba, Caruso and the other great artists. The true function of the Victrola is to reproduce faithfully the work of these artists.

The only modifications permissible are those obtained by *changing the needles* from *loud tone* to *soft tone* and by adjusting the *sound doors* to suit the size of the room or the mood of the listener.

There are Victor dealers everywhere, and they will gladly play your favorite music for you and demonstrate the various styles of the Victor and Victrola—$10 to $400. Write to us for the handsome illustrated Victor catalogs, and name and address of nearest Victor dealer.

Victor Talking Machine Co., Camden, N. J.

New Victor Records demonstrated at all dealers on the 1st of each month.

Victor Supremacy

"Victrola" is the Registered Trade-mark of the Victor Talking Machine Company designating the products of this Company only. **Warning:** The use of the word Victrola upon or in the promotion or sale of any other Talking Machine or Phonograph products is misleading and illegal.

Important Notice. Victor Records and Victor Machines are scientifically coordinated and synchronized by our special processes of manufacture, and their use, one with the other, is absolutely essential to a perfect Victor reproduction.

To insure Victor quality, always look for the famous trademark, "His Master's Voice." It is on all genuine products of the Victor Talking Machine Company.

DON'T SEND ANY MONEY

Just Clip and Mail the Coupon Below It Will Bring You Postpaid a Copy of

Our Master Reference Atlas of the World

WITH

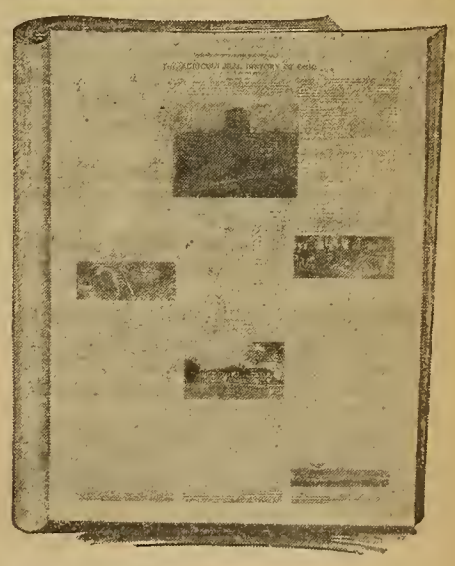
A Special Agricultural Section FOR THE STATE OF OHIO

We have prepared and have ready for distribution a wonderful reference atlas of the world, including a mass of information about the great war and a special section devoted to the history and the agriculture of Ohio.

THIS BOOK CONTAINS 38 PAGES

Each Page is 24½ x 18¼ Inches in Size

This permits the use of double-page maps 24½ inches deep by 36½ inches wide. There are six of these wonderful double-page maps in addition to dozens of others; all maps are printed in colors. This book will bring to your elbow the most complete history of Ohio, the world and the war yet prepared.



We Will Send You the Book On Approval

Clip out the coupon to the right, mail it *without money* as directed, and we will send you a copy of this atlas on approval. If you consider it worth retaining you can mail us *50 cents* in ten days. If not we will arrange for the return of the book. That is as fair an offer as we can make, isn't it? You take absolutely no risks. Mail the coupon *now*.

We Will *Give* You One of These Atlases As Payment for an Easily Rendered Service

See TWO of your friends and get them to pay you 50c each for a year's subscription to FARM AND FIRESIDE. You will be doing them a service by persuading them to read the best farm paper published. We will appreciate your co-operation and in addition will send you a copy of this atlas, postpaid for your service. Be sure to write the names plainly and also be sure to say you want atlas number 716 as your premium. You can renew your own subscription as one of the two names needed if you wish. Address your letter to

FARM AND FIRESIDE
SPRINGFIELD, OHIO

Clip The Coupon

Clip The Coupon

9-15-93-A

FARM AND FIRESIDE,
Springfield, Ohio.

Gentlemen: Send me postpaid a copy of your big Atlas of the World, with section for Ohio. If I like it I will send 50c within 10 days. If not, you are to allow me to return it without cost to me.

Name .....

Address .....

When an old partnership threatens to dissolve, two new ones are created which save the day

The Sealed Room

In Which Doubt is Ended and Love Comes to Its Own

By EDWIN BAIRD

PART IV

WHAT HAS GONE BEFORE: Tom McKay, a young farmer, goes to Chicago in search of adventure. He finds it in the person of a young girl whose chum he saves from suicide. He returns to his farm, secures a home for Dora, the girl he rescued, on a near-by farm, and tells his foreman the story of his love for Winifred of the wistful eyes.

YOCUM, throughout the recital, had stood as if carved from stone; and, now the recital was finished, he did not immediately speak

At length he cleared his throat and said, with a sorry attempt at jocularity:

"Well, old sox, I reckon this means 'good night' for me. Our partnership's busted—or soon will be. Your wife'll be handin' me my passports—"

"She's not my wife yet, and never will be, perhaps," said Tom. "She no more imagines that I want to marry her than a woman living on the planet Mars. I'll probably make an everlasting fool of myself when I pop the question, and she'll laugh at me, no doubt, and then say, in that sweet way of hers: 'Thank you kindly, sir, but I'm not in the market to-day for a farmer'."

"If she does," flared Yocum, "she's not fittin' to marry Tom McKay."

Tom knitted his brows over that. He wasn't quite sure of its meaning, but he knew what Yocum was trying to say, and this somehow enheartened him.

He was not a bad sort of man. He had always tried to live a clean, decent life, and he was generous, good-natured, and slow to anger. And he would do anything beneath heaven—*for her*. Would she have him on those conditions? . . .

With a world of anxious longing he asked himself the question, and could not answer it. Reason told him that she would; but in another moment he was afraid she wouldn't.

And at this psychological moment Yocum contributed orally to the adverse supposition.

"Tom," said he in a sorrowful voice, abating activities with the dapple-gray mare, "marriage is a serious question."

"So is a proposal of marriage," said Tom.

"It's one time in your life," pursued the gloomy Yocum, "when you gotta go slow. You hadn't oughta rush in heedless, like as if you was askin' a gal to go with you on a Sunday-school picnic. Ought you, Tom?"

"Yes, I guess that's so. But—"

"And another thing: Matrimony's committed just once in a man's life, or leastways is s'posed to be, and if you—"

"Yes, yes," cut in Tom, a trifle irritably; "I've know all that since Pete was a pup. But I tell you—"

"Now looky here, Tom," said Yocum, moving toward his employer in a brotherly fashion, "you're goin' altogether too swift in this matter. You wouldn't buy a stud horse or a brood sow without you took your time and made sure you was gettin' full value for your money. Then why do you wanta make the greatest deal in your life without even stoppin' to think?"

"Think? As if I hadn't been thinking! I've thought of nothing else since I first laid eyes on her!"

"In other words, since eight o'clock last night. About twenty hours, all told."

"Twenty hours or twenty years, it would be all the same," said Tom. "I tell you, my mind's made up. It'll be just the same next week, next month, or next year, as it is now."

"Well, just to prove that," said Yocum, his unruffled voice contrasting with Tom's nettled tone, "why not wait a few weeks?"

There was further discussion in this vein, waxing more and more specific; and the upshot was that Tom didn't catch the four-fifty train.

A myriad things thereafter claimed his time—for the full tide of the midsummer rush was now upon him—and the hours lengthened into days, the days into weeks, and the weeks into a month, and he did not go back to her.

There were moments when he, forgetting her, was content with his lot, unwilling to think of matrimony and satisfied all was well; but just as often there came times—times of solitude in the fields, or lonely times in the farmhouse—when he was visited by a nameless longing, when a vision of her face appeared before his mind's eye, alluring, enticing, strangely appealing; and on these occasions he was persuaded that his life was incomplete, and this bred a desire to return to her and scale the citadel of her heart.

This desire, nebulous for a space, crystallized one day in late July. It was a blazing hot Sunday, and Tom was seeking relief from the heat in the shade of the front porch, when he saw an automobile coming from the direction of the Zuckermans' farm; and then he saw the occupants were Mrs. Adolph Zuckerman, Dora Kirk, Miss Plum, and Winifred. He also saw they were headed straight for his house.

His first thought was that he was in his shirt sleeves and collarless, and his next that he must speedily make himself presentable. But escape was hopeless. He had scarcely risen from his chair before Mrs. Zuckerman hailed him from the road, and before he could gain the front door she was tooling the car up the driveway toward the steps.

And now, putting a brave face on the matter, he was cordially extending an invitation to his unexpected callers to "come up out of the hot sun and keep cool on the porch."

Yocum, newly returned from church and therefore garbed in his best, sauntered out, was introduced to Miss Plum, and presently strolled away with her, "to show her around the ranch." A little later Dora and Mrs. Zuckerman also departed, nobody knew where.

Tom, alone with Winifred, became acutely conscious that he had neglected to shave that morning. Memory of this omitted duty contributed generously to his discomfiture.

A small silence, not devoid of embarrassment, promptly ensued on the vine-clad porch. It was ended by Winifred's telling him, as he had already been told by the others, that she and Miss Plum had vsited the country to-day to see Dora.

"Never in all my life," she pursued, facing him animatedly, "have I seen such a wonderful change in a person. Why, Dora's another girl—not the girl I used to know, at all. And it's all due to you."

"Not to me," denied Tom, trying to hide his slippered feet beneath his chair, "but to the sunshine and her wholesome environment, and the pure country air."

"Well, anyway, it was you who gave these things to her, or at least made it possible for her to enjoy them. And we'll never be able to thank you sufficiently. I was with her that day at the hospital when your telephone message came, and if you could only have seen her, if you could only know how happy she was, how she almost wept with joy at the thought of going back to the green growing things, and the cows and chickens, and the great outdoors, you'd feel repaid for your kindness to her a thousand times over."

More talk followed, chiefly of a similar sort, and all of it distressing to Tom. Embarrassed by her encomiums, mortified by his appearance, convinced he was making a sorry impression, he could not but feel relief when at last she rose to go.

An unlooked-for delay attended her departure. Miss Plum and Yocum had wandered far afield, and only the most imperative summons—the need of haste to avoid missing the next train for Chicago—could coax them back to the automobile. Yocum, blissfully unaware of the fuss he had occasioned, stood talking with her, in a lowered tone, till the car was moving; and there was an unaccustomed look in his eye as he watched it disappear with her toward the railway station.

Early on the following morning Tom conceived a satisfactory excuse for absenting himself for a day or two, and straightway looked up Yocum, whom he was so carefully planning to deceive. It soon became evident, though, that the deception was unnecessary.

Yocum, discovered in the barnyard, began the conversation by saying:

"Boss, if it's all the same to you, I'd like to get off for t'day. I wanta visit my folks in Springfield."

The alacrity with which the request was granted apparently delighted Yocum. At any rate, he immediately started for the railway station.

A few hours later Tom started too.

Around six o'clock on that genial evening Tom entered the gaudy "parlor" of Mrs. Stookey's rooming house, preceded by that affable woman, all friendly smiles and graciousness.

"Help yerself to the red-plush rocker, Mr. McKay. And pa-ard'n me, pl'ase, for my mistake whin last we met. 'Twas comic, sure, me callin' ye Pathrick Henneberry whin yer rale name's Tom McKay, but not onnatural, as Winifred will tell ye. I'll jist run up and tell her ye're here." She bustled importantly away.

Avoiding the red-plush rocker, he moved uneasily about the room, pausing to frown at a gay chromo or a cheap statuette of calcined gypsum. He was acutely conscious of nervous fright, and was half inclined to flee.

A feminine footstep crossed the threshold behind him, and his heart leaped and ponded riotously. Desiring to hide his perturbation, he blindly opened a book on the table and, not looking toward the door, feigned an absorption in the volume. He would let her speak first. Thus he would have the initial advantage.

However, it was only Mrs. Stookey, come to inform him with delicious tact:

"Miss Winifred's dressin' herself for to see ye, and ye're in for a bit of a wait, I'm thinkin'. She's takin' sich ilygant pains with her toilette. She wants to look her best for ye. I lift the pair of 'em—her and Miss Plum—chatterin' away like Tomtits. I niver seen 'em so excited."

Tom, who had turned as the landlady spoke, became aware that his hands still held the book, and now, for the first time, he read the gold lettering thereon: "The Trimmed Lamp—By O. Henry," and promptly he was visited by a pleasurable inner glow, such as one feels upon meeting a beloved friend in a strange country.

"Have you read the stories in this book, Mrs. Stookey?"

"I have not," said she. "It b'longs to one o' me roomers, a young shippin' clerk named Marx."

"You ought to read them. They're simply immense. My foreman, George Yocum, and I have read them through, again and again. We read them aloud to each other. They deal with the romance and adventure in a city, and we agreed that the next time one of us came to Chicago—"

Mrs. Stookey, seating herself on the piano stool, ruthlessly interrupted:

" 'Tis the divil's own stampin' ground—the city. Jist see what it done to poor Dora. And she so sweet and trustful whin first she come to ut. . . . Did ye know, Mr. McKay, that Winifred come from the counthry too?"

Mr. McKay, not knowing that, nor ever dreaming it could be true, abruptly dropped O. Henry's book, all interest in it gone, and the expression on his virile face and in his sparkling eyes persuaded Mrs. Stookey—who needed slight persuasion—to tell him the story of Winifred Snow.

How Winifred was born on an Indiana farm, and how she lived there till her mother died, and her father sold out and went to Texas, and how she had come to Chicago for a course in a business college—these and kindred matters were related by the garrulous woman with pleasure as deep as the delight of her hearer.

During this time Winifred and her room-mate were happily employed with the "ilygant" toilette, and the furnished room presented a chaotic aspect.

And now at last she stood before the crinkly mirror and, slowly turning her slender body, surveyed the finished result. Miss Plum, kneeling beside her to contribute a final touch to the skirt, now rose, removed three pins from her mouth, and viewed the radiant girl admiringly. [CONTINUED ON PAGE 21]

"Help yerself to the red-plush rocker, Mr. McKay"

That Girl of Mine

Winning Her Confidence by Learning Her Point of View

By BEATRICE BRACE

"IS NOT the human plant," asks Luther Burbank, "worth as much care as the orchards, the farms, the cattle ranges?" Yet we go on devoting all of our time and our attention to improving our stock, enriching our soil, enlarging our granaries, increasing our possessions and expecting—if we think about it at all—"that girl" to be contented, to be satisfied, to grow up as Topsy did, only we expect that she will grow in a very "straight" and "narrow" way exactly according to our pattern.

It is only when we lay aside our added years and go back to our own boyhood or girlhood days that we can enter into our girl's feelings or into her inner being. "To teach a child well," says a writer, "we must have the spirit of a child."

Memory takes me back to an incident that stands out clear and distinct in my own girlhood days, and shows the wide gulf that so often exists between parent and child.

It was the last recess one day in middle January. The heavy crunch of wagon wheels could be heard in the frozen snow down the road. All over the prairie in front of the little schoolhouse was a thick blanket of glistening white. From the pond below scarlet caps could be seen weaving in and out among a group of smaller children who were skating, while the older ones, ranging in age from fourteen to twenty, were laughing and joking and playing tag from the schoolhouse stoop.

In the midst of fun and laughter the merry jingle of sleigh bells was heard on the clear, frosty air, and a moment later a pung, drawn by a lanky iron-gray horse, swung around the corner and a rollicking voice cried out: "Hurrah, for the spelling bee at Meecham's schoolhouse tonight!"

The little crowd gathered around him, and eager questions were asked, and as eagerly answered. Meecham's schoolhouse was four miles away, and we were having beautiful moonlight nights. The thermometer registered close to ten below, and not a cloud was in the sky. Of all winter nights this was the one for a sleigh ride across the white prairie. Jaunts like these, while not unusual in the early days of Iowa, were still rare enough to make it quite an event in a girl's life.

In the midst of much laughing and hilarious confusion, arrangements were soon made. One of the older boys would take a bobsled and go around to the various homes and gather them up in time to leave from a certain point at about 6:30 o'clock that evening.

All had joined in the fun and joyous anticipations but I. I had stood a little apart drinking it all in, but with the most forlorn feeling a girl ever had, for well I knew I wouldn't be allowed to go. Neighborhood sleigh rides across country didn't quite come up to my father's idea of propriety. He didn't "believe in a girl sky-larking around over the country at night." "The proper place for a girl was at home in bed. Sleigh rides, spelling bees, and evening parties were nothing more nor less than sharp-edged tools of the devil."

Married at Seventeen

THEY gathered around me and begged and coaxed and teased, and finally went to my father, explaining who would be going and begging him to let me go "just this one time"—but no! He was firm and inexorable, training me in the way a child should go—in other words, demanding implicit obedience. Yet he was an affectionate father, in many ways even an indulgent father, but surely he must have lacked the spirit of a child.

That night I crawled off to my little attic bedroom with a bitter feeling of resentment in my heart—resentment against my parents, resentment against God, and a great respect for the devil since he seemed to be the author of everything a girl wanted to do.

So at the pitiful age of seventeen I was married with all a romantic girl's fond dream of a little paradise, where "doing as I pleased" was the double-charged magnet, and meant mostly having a good time. Just what that good time quickly developed into would be another story. Suffice it to say that a few years later, when baby Marion was laid in my arms, a tiny human plant, a flood of my girlhood days swept over me and mingled with the new flood of motherhood, and in every crisis I have tried to meet the situation from that point of view.

When she was fourteen, her brother came in one day with a very disgusted look and said: "Mother, Sis is sure boy-crazy. She's got two coralled on the front porch now. You want to tell her to cut it out," he added in a masterful tone.

I hid a little smile and smothered a little sigh, and went out on the porch with a smiling face and matter-of-fact manner, and entered into the boy-and-girl chitchat. Not for the world would I have her know I attached any importance to the trivial little circumstance. "There is safety in numbers" I knew, so I planned little parties and frequent general affairs, and kept in close touch with her.

From the time when she was a wee baby we were chums. We talked over her hopes, her joys, and her sorrows. She helped with all the work about the home, and then together we planned the new dress, or the "weenie" bake or the party. Money was not always plentiful, so we tried to make up in beauty and daintiness and originality what was lacking in expensive materials.

"Sis is sure boy-crazy. She's got two coralled on the front porch now"

I have always thought that innocence is a girl's greatest safeguard, so the question of sex we never discussed. "The world," says a woman principal of a boys' and girls' high school of eighteen years' experience, "has gone sex mad. We have made it the chief topic of discussion in books, in magazines, and in plays, whereas in real life it is only a small part of things.

"After all, modesty and reticence are the best guards that any girl can have."

It is Emerson, I think, who says: "He who loves goodness lives with God—the less we have to do with our sins the better."

It isn't the big issues so much at stake as it is the daily, hourly companionship, the little vexing questions, the sudden problem that confronts us, and often requires the almost instantaneous readjustment of the ideas of a lifetime. It was when Marion was in her fifteenth year that this came so forcibly to me.

She came bounding in from school one day brimming over with enthusiasm, yet with a half-pleading look in her eyes. Instinctively I knew some issue was at stake—instinctively, too, that little prayer for guidance went out. She came up to where I was sitting with some sewing in my lap, and slipped her arm about my neck and said: "Mother, the Wide-Awake Club has invited me to a dance to-morrow night, and, Mother, I'm going. I'm going!"

At the new tone of authority in her voice, more even than her words, things began to swim round and round, as I realized my "little girl" was gone, and now, at a moment's notice, I had half girl and half woman to deal with. Again that silent call for wisdom was sent out to the Infinite as I reached up and took her hand in mine.

At the Critical Point

"LET'S talk it over, little girl," I said, summoning a far lighter tone than I felt. So she sat down all aquiver with excitement and told me about it. The Wide-Awake Club was made up of some of the very best people in the little town of Burlington, yet there were some so-called "sports," both in women and men, whom we would far rather have not had our little girl come in contact with, and her father was bitterly opposed to dancing. That question as we had long ago settled it for her had to be met now from a new angle—she *"was going."*

Dare I risk authority, dare I risk matching my will against hers, dare I risk my future influence for molding her life, by arousing a spirit of antagonism? Swiftly these questions hurled themselves through my brain, sitting there with her hand in mine and listening to her eager young voice. Suddenly my soul seemed to touch hers, and an inner voice seemed to whisper guidance—not obedience, not control, not authority, but guidance.

In the few minutes we had sat there I had traveled a long distance back into my girlhood days, through the years of her young life and into the distant future, and then I looked up and said:

"I'll tell you, girlie, we'll both go and stay until ten o'clock. How will that do?"

So I went with her, and it has borne good fruit. Just yesterday she came dancing up to me with a half-impish, half-defiant air and said:

"Mother, a lot of us are going to motor to Lawrence" (a town twenty miles away) "to-morrow night, and have supper and go to the show afterward."

I looked at her quietly for a moment, and then said: "Not unless you are chaperoned, girlie."

For a brief second her eyes flashed defiance, and her red lips pouted, and then suddenly she slid to her knees beside me and gave me a quick little hug. "All right, then, Mumsey," she said. "You're a good sport," falling into her brother's favorite expression, "so I won't, but I'd like to, though!"

Oh! Our girl is worth saving. She is a priceless possession—the hope of our nation. But the "tragedy of youth," says Edward Earle Prinnton, "is the hunger of an understanding of its aspirations. When we learn to feed the minds of children properly, there will be no more 'black sheep' of the family, for a family 'black sheep' is largely the mental soot and moral tar which others have exuded in approaching whiteness."

Luther Burbank says: "I give the plants upon which I am at work the best possible environment, and study the individual need of each one—so it should be with the child if you would develop it into something fine and noble."

Get close to your girl's heart! Spade up and fertilize the hardpan in your own, and cultivate the spirit of a child, folding her tight in a blanket of love that means not my will but her greatest good. She is worth more than land, or live stock, or cattle ranges.

PULLING BASTINGS—A fine crochet hook is ideal for pulling short basting threads. With its aid they can be hooked out without any difficulty.

C. Y. B., Texas.

TO CLEAN SAUCEPANS EASILY—When saucepans have things baked or dried on them, put a little boiling water into the pan you wish to clean and cover tightly. The steam will loosen it in a few minutes so it can be washed without the aid of a scraper.

L. G. C., Massachusetts.

BOYS! GIRLS!

You can have one or more of these articles for securing two or more subscriptions to FARM AND FIRESIDE at 50c each. Read the offers.

500-Shot Air Rifle for FIVE Subscriptions

A first-class rifle in every way, will shoot 500 shots without reloading. A great gift for a boy. Sent postpaid for *Five* subscriptions at 50 cents each.

This Electric Flash Light for TWO Subscriptions

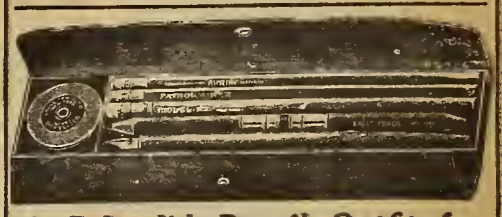
Here is a handy little light that will please any boy, girl, or grown-up. Case is nickel-plated. Has high-grade tungsten bulb. Battery with light will last for a long time and can be replaced at any electrical store. Sent for *Two* subscriptions at 50 cents each.

How to Pitch Curves

A book of interest to boys or anyone else to whom baseball appeals. Six of the greatest pitchers have chapters in this book. They are *Mathewson, Walsh, Johnson, Wood, Rucker* and *White.* 56 half-tone photos show you just how to hold the ball, etc. Sent postpaid for *Two* subscriptions at 50 cents each.

This Dandy Watch for FOUR Subscriptions

This watch is guaranteed to keep time, and to be satisfactory in every way. It is 16 size, with polished nickel case, white dial, stem wind and set. Sent free for *four* subscriptions at 50 cents each.



A Splendid Pencil Outfit for TWO Subscriptions

A nifty outfit packed in a folding box with snap flap. Contains four high-grade pencils, one pen and holder, and red rubber eraser. Will delight any boy or girl. Sent for *Two* subscriptions at 50 cents each.

Go out and see your friends, get them to order FARM AND FIRESIDE for a year at 50 cents. Send us the names and mention gift you want.

FARM AND FIRESIDE, Springfield, O.

Recipe by Janet M. Hill
Author and Lecturer on Domestic Science

Prepared in the
"Wear-Ever"
Aluminum Fry Pan

Corned Beef Hash Set slices of bacon in a "Wear-Ever" Aluminum Fry Pan; cook slowly until amber color on one side. Turn to color other side. Remove to tissue paper to drain. Chop fine an equal measure of corned beef and potato; add while chopping any cooked carrot, bits of cooked meat, vegetables or macaroni. Put in chopped material, a few spoonfuls of brown or tomato sauce, broth or water, mix thoroughly, spread evenly over pan; if more fat is needed, lift hash on one side, then on other, and add bacon fat. Cover and let cook very slowly until well browned beneath. Fold and turn on a hot platter; place slices of bacon around and serve.

The "Wear-Ever" Aluminum Fry Pan is an invaluable aid to good cooking. The enormous pressure of rolling mills and stamping machines makes the metal in "Wear-Ever" dense, hard and smooth.

Replace utensils that wear out with utensils that "Wear-Ever"

Send for the sample 1-quart Stewpan. Only **30c**

The Aluminum Cooking Utensil Co.
New Kensington, Pa., Dept. 57 [or if you live in Canada] Northern Aluminum Co., Ltd., Toronto, Ont.
Send prepaid, 1-qt. "Wear-Ever" Stewpan. Enclosed is 30c in stamps—to be refunded if not satisfied. Offer good until October 20th, 1917, only.

Name..... Address.....

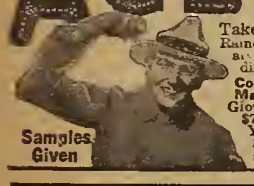
TELEGRAPHY—Morse and Wireless—learned at home with our instructor. Instrument and instructions $12.00. Particulars free. Address.
Acorn Self-Instructor Co., Dept. F., Roanoke, Virginia

NEW FEATHER BEDS $8.95
Full weight 40 lbs. A pair 6-lb. Pillows to match, $1.30. New, Live, Clean, Sanitary Feathers. Best feather-proof ticking. Sold on money-back guarantee. Write for **"Book of Truth"** our **FREE** catalog. Agents wanted.
American Feather & Pillow Co., Desk 62 Nashville, Tenn.

EARN $1 TO $2 A DAY AT HOME

Help to meet the big demand for Hosiery for us and your Home trade. Industrious persons provided with profitable, all-year-round employment on Auto-Knitters. *Experience and distance immaterial.* Write for particulars, rates of pay etc. Send 2 cents in stamps.
Auto-Knitter Hosiery Co., Inc.
Dept. 90 E; 147 Franklin St., Buffalo, N.Y.

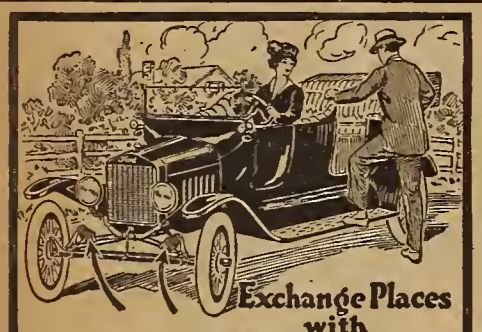
AGENTS!



Take orders for World's Greatest Raincoat Values. 65 fabrics. Dozens of styles. Made to measure. Delivered direct to customer. Dandy coat $3.98
Cooper Making **$300.00 a Month**
Glover $61.50 in 4 days. Many $50 to $75 a week. We deliver and collect. You get your profit in advance. Samples free. Write for our offer.
Samples Given
Comer Mfg. Co., Dept. M-11, Dayton, O.

HOOSIER STOVES & RANGES FREE
To try in your home 30 days free no matter where you live. Show your friends, send it back at our expense if you do not want to keep it. Million members of families enjoying the comforts and pleasures of **"Hoosier" Stoves & Ranges,** perfect bakers and heaters, beautifully finished, smooth latest design, guaranteed for years.

Write for our big free book showing photographs, describing large assortment of sizes and designs of Steel and Cast Ranges, Cooks, Soft and Hard Coal Heaters, to select from, explaining our free trial. Send postal today.
HOOSIER STOVE CO.
126 State St., Marion, Ind.



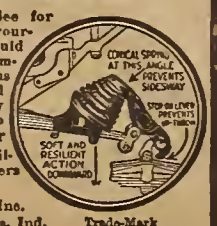
Exchange Places with
Your Wife—

IF YOU are not jolted around on the front seat as much as she is on the rear seat, it is because you can brace yourself with the steering wheel. You take the rear seat, she the front. Then you'll *know* that you ought to equip your Ford with a set of the

HASSLER Shock Absorber For Ford Cars

The Hassler makes both seats as comfortable as any $2,000 car. You'll feel the difference in the front seat as well as in the rear. Easier to hold the steering wheel. Easier to guide the car where you want it to go. No sudden jolts. No sharp rebound. No sidesway. Cushions the car as well as the passengers. Lets tires last so much longer that the extra mileage pays for it several times over. Over two hundred thousand sets in use.

Free Trial Offer See for yourself how much the Hassler would mean to your wife, your family, and yourself by letting us have a set put on your Ford for ten days' trial. No money in advance. No obligation. No risk. **Write today for Free Trial Blank** and illustrated folder with letters from users. Address



ROBERT H. HASSLER, Inc.
Dept. N-1. Indianapolis, Ind. Trade-Mark

Housewife's Club

Using a Bread Mixer

By Mrs. Lena B. Choate

I HAVE used a bread mixer for two years, and it has paid for itself many times over in the saving of time and labor. I would not think of doing without one. No busy farmer's wife would think of making her everyday apron by hand. Then why do so many waste time by making their bread without a machine?

Perhaps one reason why some housewives do not take kindly to the bread mixer is that bread is usually made by guess, and to use the machine successfully it is necessary to measure each ingredient. Also, the mixer to be successfully used must be securely fastened to something that stands "firm as a rock." One competent housewife I know discarded her mixer because it could not be fastened to her kitchen cabinet, for when the dough was being kneaded it seemed fairly to pull the cabinet to pieces. No one can successfully use a mixer without a small wrench, as the "arm" cannot be securely fastened with the fingers, neither can the machine be fastened to a board or table without a wrench. When I purchased my machine I thought it would be a failure, as the arm pulled out of the dough as soon as it was mixed and commenced to knead. I got a bolt with a bur and nut, and with my wrench solved the whole problem.

A mixer will not thoroughly mix and knead a large baking in three minutes, a claim that is sometimes made for it, but it will knead the dough just as well as can be done by hand and in a fraction of the time.

Another advantage of the mixer is that a child or anyone can turn the machine and have just as good bread as if Mother made it. I usually mix the dough first thing on arising, as it takes but a few moments. By the time breakfast is over it is ready to put into loaves.

"Well begun is half done" when using the machine, for if the ingredients are not accurately measured when put into the reservoir the work cannot be performed so quickly, and often the result is displeasing. It is not easy to add later just enough liquid or flour to have it exactly right. When too much liquid is used and more flour is required, turning the machine backward will often incorporate the flour more quickly than turning right. The best way to add more liquid is just to sprinkle the dough, using only a little liquid at a time, for if the whole amount is used the dough becomes so wet on the outside that it will not cling to the mixer and be kneaded. If this condition occurs, rubbing the sides of the kneader with flour will remedy it.

It is always easier to add flour than liquid, but to measure or weigh accurately the ingredients is by far the safer and better plan. I consider the bread mixer one of the greatest time and labor savers ever invented for the housewife.

"Come Home" Signals

By Margaret Bartlett

TO THE mother who has shouted herself hoarse in an endeavor to call home her children at play in a neighboring yard, the following methods used in my childhood town will furnish help: Our "neighborhood crowd" numbered a dozen or so boys and girls from half a dozen families. Summer and autumn evenings we always congregated under a large arc light, where we could carry on our games of shadow tag, hide and seek, robbers, etc., as well as if not better than by day.

"Come home" time varied with the different families. Invariably in the midst of our laughter and shouting would come the angry voice of some parent: "Gordon, come home at once! You'll not go out another evening if I have to call you again as many times as I have to-night." The crying petitions of the child that he "hadn't heard" were of no avail.

Happily, at last one mother hit on the plan of ringing a bell when she desired her children to come home. It was effective. The bell could be heard no matter how loud the shouts of the children.

Other mothers were quick to see the advantages of such a signal, and to adopt "come home" calls.

"P-r-r-r-r-t! P-r-r-r-r-t!" Ruth's mother was trilling. That meant it was time for Ruth to come in.

"Yes. Coming!" Sam and Louis would bid a hasty good-night. Their mother was clapping her hands for them.

A fish horn, a whistle, and a pair of clappers were also requisitioned by the relieved parents. The result was equally satisfactory to the children, for they knew their respective calls could always be heard at once, and a ready response to the summons would mean no irritated, scolding parents to deal with before bedtime.

On any farm where there are several children the same plan can be carried out. Each child should have its own instrument, or a prearranged signal on the same one used for all. The first is preferable, as there then can be no question as to who is wanted.

Yoke in Rose Filet

ONE of the loveliest pieces in a bride's trousseau was this filet yoke in rose pattern. The shape of the yoke adds to its distinctiveness. For complete directions send four cents in stamps to Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

Removing a Turpentine Odor

By Monica Kelly

HER refrigerator needed to be freshened up in appearance, and she decided to enamel it white outside and in. She thoughtlessly thinned the enamel with turpentine, and since then she has been unable to use the refrigerator at all for storing food. Everything she puts into it absorbs the fumes of turpentine so that it is unfit for use.

To remove the odor of turpentine from the ice box the paint expert gives the following advice:

"The only practicable method, aside from removing all of the enamel from the box, is to expose the interior to the combined action of sun and air, by setting the box opened out of doors for several days. Turpentine is volatile, and will finally disappear if given a chance.

"Possibly the turpentine used was old and yellowish in color. Old, gummy turpentine disappears more slowly by evaporation than the new colorless product. Removal of the odor indoors might be accomplished by supporting a hot brick or iron in the box so as not to injure the enamel. Leave the box open while the brick cools, and repeat the operation several times."

Perfect Potato Salad

By Jane Macpherson

TO MAKE this salad, use four cupfuls of sliced boiled potatoes, juice of one lemon, one teaspoonful of salt, one-eighth teaspoonful of pepper, three tablespoonfuls of olive oil, four stalks of celery, two slices of bacon, chopped, one tablespoonful of minced parsley, one small onion, chopped. Slice potatoes, while still warm, into a mixing bowl. Add salt, pepper, olive oil, celery, bacon, and lemon juice, as named, then add the parsley. Arrange in a salad bowl garnished with lettuce, and garnish with hard-boiled eggs.

Ways to Use Grape Juice

By Edith C. Armbruster

NOW that grapes are plentiful, the prudent housewife will do well to can a supply of grape juice for winter use. Besides being a delicious beverage, it is very nourishing and has wonderful tonic properties. In making apple pies, a delightful change may be obtained by pouring a few spoonfuls of grape juice over the fruit before putting on the top crust. Baked bananas are much improved in flavor if a little grape juice is poured over them before putting them into the oven. It also is a valuable addition to mincemeat and renders the use of brandy unnecessary. An appetizing punch may be made by adding a tumblerful of grape juice to a quart of lemonade. Many delicious desserts have grape juice as a basis.

GRAPE JUICE—Pick grapes from the stems, and wash. Place in a preserving kettle and almost cover with water. Bring slowly to the boiling point, crushing the grapes with a spoon or potato masher. Boil five minutes, and drain in a jelly bag overnight. In the morning measure the juice, and to each quart add one-third cupful of granulated sugar. Boil three minutes, and seal air-tight in bottles or glass jars.

GRAPE JUICE WITH EGG—This is very nourishing, being both food and drink. For each glass, beat the white of one egg until very stiff. Pile the egg in the bottom of each glass, and over this pour grape juice; pour it in one spot and let it spread as it will. Sprinkle a little powdered sugar on the top of each glass. This is an ideal drink for an invalid or anæmic person.

INDIVIDUAL GRAPE-JUICE PUDDINGS—Let one pint of grape juice and one cupful of water come to a boil, then add three-fourths cupful of sugar and one-half cupful of cornstarch dissolved in a little cold water. Boil about ten minutes, stirring to prevent scorching. Sprinkle into small individual molds a teaspoonful each of finely chopped nut meats; over these pour the hot mixture. When cool, turn out of molds. Serve plain or with cream.

GRAPE-JUICE WHIP—Dissolve one and one-half heaping tablespoonfuls of powdered gelatin in one and one-half cupfuls of hot water, add one-half cupful of sugar and stir until dissolved. Add one and one-half cupfuls of grape juice and allow the mixture to cool. Beat the whites of two eggs to a stiff froth and stir into the gelatin. Serve cold with sweetened whipped cream.

FRUIT CUP WITH GRAPE JUICE—Cut two bananas and one sweet apple into dice; add one large orange and two canned peaches cut into small pieces. Over all pour one and one-half tumblerfuls of grape juice, and let the mixture stand for at least an hour before serving.

GRAPE-JUICE TAPIOCA—Boil together one pint of grape juice, one-half pint of water, one-half cupful of granulated tapioca, and one-half cupful of sugar until done. Remove from fire, and fold in the stiffly beaten white of one egg. Serve cold.

BAKED APPLES WITH GRAPE JUICE—Pare and core apples and place in a baking pan; fill each cavity with granulated sugar; pour over each one tablespoonful of grape juice, and top with a small piece of butter and a sprinkling of nutmeg. Bake until the apples are soft, basting occasionally with the syrup.

E

Looking Your Best

Good Health and Cheerfulness Aid Eye Beauty

By MARGARET DRUMMOND

THE eyes have much to do with the beauty of the face, and careful attention to them will both increase your beauty and improve your physical condition. The beauty of the eye itself depends on three things—its color, its brightness, and its expression. In health the white of the eye is a pearly white. Indigestion and a bilious condition are shown by a yellowish tinge, and it is well known that the use of alcoholic drinks will cause tiny red veins to show in the white, so that freedom from discoloration is the first requirement.

The color of the eye itself does not matter much, and blue eyes with black hair are just as beautiful as black eyes with blond hair. So far there is no scientific method which can change the color of the eyes.

Taking care of the eyes is a very simple matter. All there is to be done is to wash the eyes in cold water night and morning and after long drives in the wind, drying them very gently afterward with a soft piece of linen—an old handkerchief is excellent. In drying, always wipe toward the nose, as it is in the corner nearest the nose that the dust and various humors thrown off by the eye collect. Don't forget that crying is very bad for the eyes. Repeated crying will in time weaken the action of the gland which secretes the tears, and this in time dims the brightness of the eye. A good rule for eyes, as well as general health, is: "Don't indulge in grief."

Weak eyes are never pretty, so it behooves you to protect your eyes in every way possible. Do not strain them by reading or sewing in a bad light. When the daylight begins to fade, if you must sew, light the lamp, and for the good of all the family see that the light is a good one. Don't ever skimp on either lamp or oil. When your eyes are tired from overwork, massage the eyelids very gently, using the lighest touch possible, working toward the bridge of the nose always. Rubbing the eyes on waking in the morning or when washing the face is a very bad thing, as any pressure or harsh movement will tend to hurt the eyeball.

WASH your eyes as often and as conscientiously as you do your teeth—at least twice a day. If your work keeps you out in the fields or in a hot kitchen, or where you are exposed to the things that irritate and inflame them, washing in pure cold water will give you the greatest relief, and the nightly washing will make you sleep better. But do not rub hard in washing or drying. If the eyelids are inflamed and granulated, use boric acid to wash, in the proportion of one level teaspoonful to a tumblerful of boiling water. Use when cold with an eyecup, which costs only 25 cents and is a most useful thing to have on hand.

It is very bad to use the eyes constantly by artificial light. Where work has to be done in this way, frequent rests of two or three minutes are of great value. The amount of time lost in this way is more than made up in the greater comfort.

In working, the light should always come over the left shoulder, and if you are working in the open air the sunshine should not be allowed to fall on book or work. If the light is strong, the eyes should be protected by a wide hat brim. The habit of changing the focus is a very good one. If you have to sit for hours at a stretch over book or sewing, lift the eyes occasionally and look at something else for a few minutes. Turn the eyes in every direction—far and near, sidewise, upward, and downward—the farther off the better, and you will find the eye really rested when it returns to work.

If a cinder or a piece of dust gets into the eye, *don't rub it.* The instant closing of the eyelids will usually bring tears which wash the trouble out. Sometimes it can be removed by holding out the upper lid with one hand while blowing the nose vigorously with the other.

The eyelids are the most sensitive part of the face. They tell the tale of sleepless nights, late hours, bodily fatigue, and sadness. Invariably they betray your physical condition. Dissipation and overeating are always manifested in puffed, thickened eyelids. The prevention is in your own hands.

Here are some exercises for strengthening weak eyes:

1. Hold a pencil at arm's length, draw it slowly up to the bridge of the nose, looking at it closely all of the time. Do this ten times.

2. Raise your eyes as high as you can, as though you were trying to look at the ceiling, then look down at the nose. Do this five times very slowly and very gently, never trying to strain the eyes.

3. Look to the left as far as you can in a direct line without straining the eye. Repeat with the right eye. Do this five times.

These simple exercises practiced daily and faithfully will do much to ward off the necessity of glasses. They should not be done facing the light. As the eyes become stronger they should be done morning and night.

Too Thin

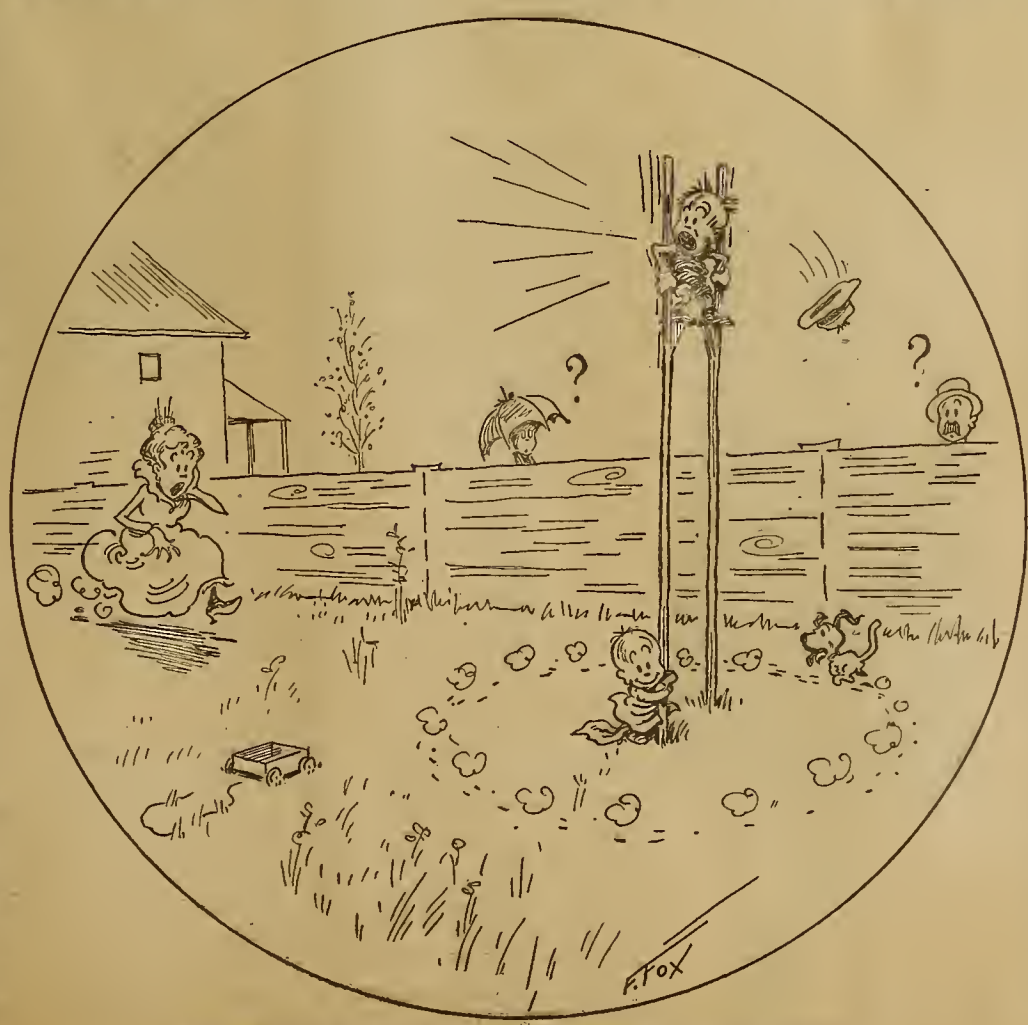
E. B., IDAHO—There is nothing like worrying to keep you thin, and as long as you worry about your condition you will not put on flesh. Get plenty of rest, exercise out of doors, and stick to a simple, nourishing diet, and I am sure you will gain all the weight you want.

For Sallow Complexion

Z. W., MISSOURI—You say your complexion is very thick and dark and that this is not natural for you. The reason for that may be constipation, and very probably your diet is at fault. Eat plenty of fresh fruit and vegetables, with eggs and milk, sleep with your windows wide open, and walk or ride out of doors every day. Follow the directions I gave some time ago on the care of the complexion, and your color should improve at once.

Ruined by Dye

M. B., ILLINOIS—I am sorry you ever dyed your hair. That is a great mistake. It is much better to keep your hair clean and healthy, and when it begins to turn gray to arrange it more carefully so that it will still be pretty. Shampoo frequently, at least once a week, for six weeks, and brush carefully every night with a moderately stiff brush. Under this treatment the hair will gradually come back to its natural color.



The baby's affectionate disposition nearly brings on a disaster

The Sealed Room

[CONTINUED FROM PAGE 18]

"You look jes' beautiful, Win," said she, her pale eyes shining, her own angular lack of beauty quite forgotten. "No wonder he's crazy aboucha. Any man would be."

Winifred smiled over her shoulder at the adoring Henrietta.

"That's awfully sweet of you, Hen." And then, as her long blue eyes took in the mad disarray of the room: "My, but this room's a sight! I think I'd better straighten things up—"

"Not much you won't!" asserted Henrietta. "You go on down to him. I'll attend to this mess."

"That's dear of you, Hen; but really—"

"Oh, I'm expectin' my r'ward," bantered Hen. "When you're married and livin' on yer farm you gotta send me a week-end invite, because maybe that foreman of his—"

"Henrietta Plum!" Winifred was scarlet to the temples. "Why, you're perfectly outrageous? He may not even be dreaming of marrying me."

"Then what's he doin' here?" demanded Miss Plum.

"Lots of men," said Winifred, "call on girls whom they don't intend to marry. Perhaps he's not thinking of marrying anybody."

Miss Plum's response to that was analogous to the answer of Mr. George Yocum, submitted not long ago in somewhat similar circumstances:

"Well, if he's not thinkin' o' marryin' you, he ain't fit to be yer husband."

Descending the stairs a minute later, Winifred puzzled her mind over that as Tom had puzzled his over Yocum's reply, and, also like Tom, she construed it favorably.

But when, moving with the lithe buoyancy of youth, she came to the "parlor" doorway, all thought of herself vanished. Seeing him there, she thought only of his wonderful goodness, of his great kindness to Dora, and she thrilled with a nameless emotion. In that quivering instant she knew that she loved him with all her soul.

As he rose from his chair she went swiftly toward him, starry-eyed, her hands outstretched, a delicate flush in her fine, smooth cheeks. Clasping both his hands, she lifted her humid eyes to his.

"It was so kind of you to come to see me, and I appreciate it—more than I can say."

Gazing down into her upturned face, the power of speech deserted him. He, who could face any physical danger with an unhurried pulse and a steady eye, was now tongue-tied with trembling fright.

Mrs. Stookey, knowing a propitious moment when she met one, quietly withdrew, closing the folding doors behind her.

Tom moistened his lips.

"I'm going back to-night. I thought, perhaps—I came to see—if you wouldn't go home with me."

For all his nervousness, there was a thrilling inflection in his voice which caused her to lower her eyes, and the warm blush in her cheeks mounted higher and higher still, until it bathed her white brow in a crimson flood.

The Great Moment had arrived! He loved her! He wanted to marry her! It was like a dream come true.

And yet—who can fathom the heart of a girl?—she did not answer his question, then. Instead, she asked another—a question so wholly unexpected that it left him gasping in utter bewilderment.

"Do you happen to know if that unattached foreman on your ranch is susceptible?"

"W-why—what on earth! *You* surely don't— What *do* you mean, anyway?" he demanded, staring at her with Heaven knows what wild thoughts in his mind.

She could meet his eyes now, smilingly. Having succeeded in perturbing him, her own palpitation promptly subsided.

"I was only thinking," she said, "of a very particular friend of mine who feels strangely drawn to country life, and I was wondering— Am I talking ridiculously like a matrimonial bureau?" she laughed.

"You're talking like an angel!" he boldly declared; and he was thinking: "By George! Wouldn't it be immense if old Yocum should take a notion to marry!" However, he was too intent upon his own love affair to take much interest in another's problematic one.

"Listen to me, Winifred—I love you, dear. I want you to be my wife. Aren't you going to marry me?"

"I—I—" She abandoned the fluttering sentence and, hiding her face against his shoulder, vigorously nodded her head up and down. . . .

Outside, in the slovenly street, the world flowed on, heedless, selfish, higgledy-piggledy—a sordid, self-centered world of greed and misery, and the everlasting pursuit of happiness. But to these two, alone with their love, this world was a paradise, ineffably pure and perfect.

But they were interrupted in a most extraordinary and wholly unexpected manner.

Tom heard a familiar voice in the hall asking for Miss Henrietta Plum, and he strode to the folding doors and flung them open, and beheld George Yocum—Yocum, who had, with violent argument, inveighed against hasty marriages!

If Tom, on hearing Yocum's voice, had been unable to believe his ears—and he had been so astounded—Yocum could scarcely believe his eyes.

"Well, I'm blowed!" said he, and sank limply into a chair, staring dumbly.

HAD you been a diligent reader of a certain Chicago newspaper you might have learned, one autumn day, that marriage licenses were issued at the county building in Chicago to Mr. Thomas McKay and Miss Winifred Snow, and Mr. George Yocum and Miss Henrietta Plum. But you would have vainly searched, in this or any other paper, for details concerning the wedding, which was performed for the four of them by Rev. Philip Webb. Mrs. Stookey and Mrs. Buckle and the Zuckermans and Dora Kirk were among those there.

And the little minister still tells of the splendid donations—checks of four figures each, no less—which the bridegrooms made to "the cause."

[THE END]

An Hour with the Children

By Pearl Chenoweth

MANY a hard-working woman is forced to deny her children faithful companionship because of things in life that must be attended to. Often her manifold cares are so pressing that it is hard to know what can be left undone, but every mother should so arrange her duties that one hour each day may be devoted to the children. This may be made the most enjoyable as well as the most profitable hour in the allotment of her time, and no cares, however urgent, should be allowed to intrude on this sacred hour.

It will not add to the bank account, but it will add to the length and happiness of her years as nothing else can, and it is certain that the children will cherish a hallowed memory of this hour while life lasts.

This is the mother's great opportunity for giving her children a permanent love of good literature. The fine old myths and fairy tales are now put into the simplest language. The child who becomes familiar with them very early in life is started toward a fine literary education. When one can read the best books understandingly, it brings a keen enjoyment to the mind, it creates a positive dislike for trashy reading, and fits one for association with the best people.

There is no need to fear for the future safety of the boy or girl who reads the best in literature with Mother.

We are at Your Service

Your subscription to Farm and Fireside entitles you to the services of the Editorial and Business Departments of the paper free. We spend a lot of time and money to collect information on the things that affect you and your business. We wish to give you the benefit of this information. Feel free to write to us if you need information or desire advice.

Address the Editorial Department for any information you may desire on any or all of these subjects: Live Stock, Dairy Methods, Poultry-Raising, Crops and Soils, Seeds and Nursery Stock, Market Packages, Automobiles, Garden and Orchard, Farm Machinery, Household Equipment, Insect Pests, Handy Devices, Recipes, Good Books, and Health.

Address the Circulation Department if you wish to know about Premiums, Agencies, Subscriptions, or Clubbing Offers. Address the Pattern Department if you have questions concerning Patterns and Fashions. Address the Business Manager if you desire information about Advertising Rates, or Reliability of Business Concerns.

If you are in doubt about which department to write, address the Editorial Department and your inquiry will be cared for properly.

If there is something in Farm and Fireside you like or don't like, let us hear about it. Don't wait until you have a question to ask.

Farm and Fireside
Springfield, Ohio

Clothes You Can Buy

Miss Gould Has Selected Them and You Can Order Them Through Farm and Fireside

No. 17. Feather-trimmed hat, $3.50

No. 17. If you want a stylish hat, one of New York's most popular models, you'll select this one. It is sure to be becoming and it can be worn with almost any costume. It is of black silk velvet with a silk plush crown, surrounded by a white feather breast. Price, $3.50.

No. 23. The woman who wants something conservative and the older woman will select this close-fitting draped hat of black Lyons velvet. It is smartly simple, depending for triming on a black jet ornament. Price, $2.95.

No. 20. Every fall and winter outfit will include a simple dress of serge. The one pictured on this page can be used for so many different occasions that every girl and woman is sure to want it. It comes in navy blue or black, and the serge is excellent in quality. There is a silk tie, a white poplin collar, and a quantity of buttons to form the trimming. Sizes 14 to 18 years. 36 to 44 bust. Price, $11.95.

No. 21. A good warm coat is a necessity, and this is a model any girl or woman would be glad to own. Wool velour is the material. The comfortable big collar can be worn open or buttoned up close to the neck. The belt holds the fullness in place, and big bone buttons form effective trimming. The coat comes in black, navy, green, brown, and burgundy. Sizes 14 to 18 years. 36 to 44 bust. Price, $16.95.

No. 23. Velvet hat, $2.95

HOW TO ORDER: Send your order to the Fashion Editor, Ready-to-Wear Department, FARM AND FIRESIDE, Springfield, Ohio.

Be sure to state size and color. Write your name and address plainly. Remit either by bank draft, post-office money order, express money order, or check.

In case you send currency, be sure that the letter is registered. We cannot be responsible for money lost in the mails.

No garments sent C. O. D. or on approval. Your money back if you do not like the garments. All goods must be returned within seven days of their receipt. Return them direct to the firm who makes the shipment to you—not to FARM AND FIRESIDE—by insured parcel post or prepaid express. We cannot be responsible for return packages lost in transit unless sent as directed.

To choose these models from the many others at the turn of the season, Miss Gould, as fashion expert, has rendered you a personal service. Without any troublesome searching on your part, you can be assured of having your new fall outfit smart, inexpensive, and up-to-date. Wherever you live, New York will come to you if you buy through this page.

No. 18. Waist, $1.00
No. 19. Skirt, $3.95

No. 20. Serge dress, $11.95

No. 21. Velour coat, $16.95

No. 18 is a dainty waist made of white cotton voile attractively tucked in front and back as well as on the new shaped collar and cuffs. The trimmings are pearl buttons and lace. Sizes 34 to 46 bust. Price, $1.00.

No. 19. A skirt that is both smart and practical. The material is serge—wool combined with cotton. Colors are gray with green and blue plaid stripe, blue with brown plaid stripe, or entire skirt blue and green plaid. Sizes, 24 to 30 waist and 36 to 41 length. Price, $3.95. For extra sizes there is an additional charge of 50 cents.

No. 22. Two-toned striped percale is the material of this attractive house dress, with plain chambray trimmings in blue, lavender, or pink. Sizes 36 to 46 bust. Price, $1.50.

No. 22. House dress, $1.50

Lost in the Woods

By E. S. Masterson

Part I

ONE day in November, when I was a lad of eight, I got permission from my mother to go after nuts with a comrade named Jimmie, a poor Irish lad who lived not far from our home. Mother never asked which way we were going. There was small need. The country was safe and neighbors plentiful enough in almost every direction we might go. So I trudged happily across the field to Jimmie's home, and found him quite ready to go with me, for gathering and selling hickory nuts was part of his regular occupation, and with the money he bought his school books. As we were about to set out, his little sister, Hettie, came timidly to the door with a little basket on her arm. Hettie had pink cheeks and timid blue eyes, very pretty to see. Good Mrs. Shaw was giving us an account of how her apple butter was making when she saw the little girl, bonnet on head and basket on arm.

"Well, bless the baby, now! Can you boys take her along? Sure, she might pick up as many nuts as the best of ye, if you don't walk too fast for her."

"Yes, let her come," said I. But Jimmie looked serious.

"Mother, you don't know how short her legs are, and how slow she walks sometimes. Will you promise to walk fast, Hettie?"

"Yes, I'll skip all the way," and she ran to me and seized my hand, and we started off.

"Let's go by the persimmon tree," said Jimmie. So we first visited the persimmon tree, as it was not much out of our way. It stood alone in a back pasture and was well laden with purpling fruit, but they proved rather puckery and we did not tarry long with them.

Not far beyond the persimmon tree began the thick woods. A fence of round poles, made by felling straight young trees, made the barrier between it and the pasture. Tall and straight the forest trees stood, some of them immensely large, not always close together, but having little openings in between them, and in these openings thickets of wild rose, wild plum, and hazel bushes. Some of the trees were oaks, some were elms, some were hickories, their leaves mostly fallen now, though some yet clung to the nearly naked branches, and their nuts were nearly all on the ground. Hickory nuts were what we most desired, and soon we were busy picking them up, shelling those that still had their hulls on, and slowly the little stores accumulated in our baskets.

I cannot say that our luck was very good that day. We were late for nuts. The squirrels had been busy as well as other treasure seekers. But as we wandered farther and farther into the forest we found many wonderful things. There was the little old abandoned log cabin, for one thing, where tradition said an Indian had lived, the last of his race in the land, and Jimmie, who was older than I, told me that once he had seen the old man, and that he had given him part of a watermelon that he had grown there in the little clearing. We were rather afraid there, beside the ruined old cabin, and did not tarry long.

Presently we came to a place where were many great bones, as white as snow, and there we lingered with horrible fascination and talked in low tones of what animals may have possessed these bones and of how they came there. We lingered here so long that at last we overcame our horror of the white bones and stayed to play a little with them. We set them up as best we could, in the form of some monstrous animal, putting the great head with its enormous teeth at top. It made an imposing and rather frightful skeleton as we left it, and it rather awed us as we looked back at it.

After that we were busy gathering hazelnuts for a little while. They filled our baskets fast, but we did not prize them as we did hickory nuts, for they would not sell very well, and when hulled they did not make much show. Little Hettie did not help us at this, but sat soberly on a log and watched us.

Finally she said very firmly and distinctly, "Jimmie, I want to go home."

"All right, Sis. We'll go pretty soon."

Then we took her hand and set out for home.

Clouds had covered the sky and a coolness filled the air with chill. We could hear the wind sighing through the great elmtops.

"We must hurry," remarked Jimmie. "It's later than I thought," and he anxiously peered ahead through the forest lanes that ever turned to the right or to the left. "I don't seem to remember being in this part before, but no matter. We are going toward the old pasture."

We thought so and trudged on. After walking a weary way and having an argument with little Hettie, who wanted to be carried and was too fat and heavy, we were glad to see a fence ahead of us. We hurried to it and climbed eagerly upon it. The familiar pasture was not on the other side! Instead, there was a great moory place, very wide, with tall sword grass and little shrubs in which blackbirds build their nests. We had never seen this place before. In the far distance we could see a group of houses and barns. It seemed like a village to us, though in reality it was but the buildings of one farm, and not very far away either.

"That must be London," said Jimmie. Wonderingly I agreed. London was the largest town near us, and it was some sixteen miles away. Yet we had walked so far, we were quite willing to believe that we had come in sight of London.

"We must go the other way. We have been coming the wrong way all the time." So we turned back. We each took one of little Hettie's hands now, for she was sobbing because she had laid her basket down and could not find it. She continually had us turn from our way to seek it.

"Right over there is where I left it," she would say, and point to some little glade between the hazel bushes, and we would rather unwillingly go and look.

"Wha-what is that?" we all cried as all at once loomed up before us a ghostly figure, gleaming white. Our hair rose up and we were too startled to run.

"Pshaw, it's nothing but the old bones we piled up. Come, we must turn here to the left," and we turned, glad to escape that fatal spot of mystery. We wandered on, not finding little Hettie's basket.

"If we could find Indian Jack's cabin we would know how to go from there," said Jimmie thoughtfully. But we found the forest looking ever stranger and wilder as we walked. At last we came to a spot that we had never seen before. It was a round clearing, grassy, smooth, with giant trees standing all about.

"Let's try hollering," I suggested. Whereat we all called as loudly as we could, and repeated it again and again. Terror filled our hearts at the echoes that came back to us and the dense silence that followed the echoes. Little Hettie was crying silently now, and we got down beside her and tried to comfort her.

She fought her tears back bravely.

"But I'm so cold and I want my mama," she said. [TO BE CONTINUED]

Our Hired Girl

By James Whitcomb Riley

OUR hired girl, she's 'Lizabuth Ann;
An' she can cook best things to eat!
She 'ist puts dough in our pie pan,
An' pours in somepin' 'at's good and sweet,
An' nen she salts it all on top
With cinnamon; an' nen she'll stop
An' stoop an' slide it, 'ist as slow,
In th' old cook stove, so's 'twon't slop
An' git all spilled; nen bakes it so
It's custard pie, first thing you know!
An' nen she'll say:
"Clear out o' my way!
They's time fer work, an' time fer play!—
Take yer dough, an' run, child; run!
Er I cain't git no cookin' done!"

When our hired girl 'tends like she's mad,
An' says folks got to walk the chalk
When *she's* around, er wisht they had,
I play out on our porch an' talk
To th' Raggedy Man 'at mows our lawn;
An' he says "Whew!" an' nen leans on
His old crook scythe, and blinks his eyes
An' sniffs all around, an' says, "I swan!
Ef my old nose don't tell me lies,
It pears like I smell custard pies!"
An' nen *he'll* say:
"Clear out o' my way!
They's time fer work and time fer play!
Take yer dough, an' run, child; run!
Er *she* cain't git no cookin' done!"

Wunst our hired girl, one time when she
Got the supper, an' we all et,
An' it was night, an' Ma an' me
An' Pa went wher' the "Social" met—
An' nen when we come home, and see
A light in the kitchen door, an' we
Heerd a maccordeum, Pa says, "Lan'
O' Gracious! who can *her* beau be?"
An' I marched in, an' 'Lizabuth Ann
Wuz parchin' corn fer the Raggedy Man!
Better say:
"Clear out o' the way!
They's time fer work, an' time fer play!
Take the hint, an' run, child; run!
Er we cain't git no *courtin'* done!"

(By Permission of Bobbs-Merrill Company)

True Happiness

By L. D. Stearns

IT'S a beautiful world, friends. Why spoil it by grumbling? Why throw away your birthright of joy and gladness and deep abiding peace in a mad rush after gain? Don't forget that the very best things lie close at hand. I heard yesterday of a poor lad, paralyzed the entire length of one side, his right hand and arm useless, yet he was making good at odd jobs in a large concern, singing and whistling the whole day through, and when one of the working force said to him one day, "You're always happy, John. How is it?" he turned, with his ready smile fading a bit. "I have to be, don't you know, Miss F——," he replied. "I have to sing and whistle *to forget*."

Friend, it helps to be cheerful. It helps to be brave. We're all reaching out for happiness, but we think too much about it. We're too closely occupied with the *I* of it to get the most out of life.

What though you *did* fail in your undertaking? Begin again. What though you *did* meet with a loss? Thank God it left you with health and strength. What if life hasn't turned out just as you planned it. From one end of the earth to the other humanity echoes the same cry.

Let's be true, friend. *Let's be true!* True to ourselves, to life, to God. It will mean the giving of our best every day, when perhaps we are tempted to give but half best, or even to shirk utterly and give next to nothing. It will mean making our bodies a fit dwelling place for the soul God put within them. It will mean self-denial of those things that hurt. It will mean accepting responsibilities, shouldering blame in our work, when the blame is ours; not trying to make excuses nor throwing them on another. It will mean being patient, brave, and kind, whether the burden of the day be heavy or light—reaching out a helping hand to the one who is close beside and almost ready to fall. It will mean, friend, giving out to the world a bit of that same God-spirit that was fashioned into your soul when you were sent into this old earth fresh from the heart of love and of God.

New Puzzles

An Investment Problem

The Smiths were purchasing a suburban villa when Smith remarked: "If you give me three fourths of your money I can just buy this $5,000 house, and you will have enough left to buy the shady grove and the running stream."

"No, no," replied his better half, "give me only two thirds of your money and I can buy the house and you will have enough left to purchase the grove and the brook."

Can you figure out the value of the shady grove and the running stream?

Answers to Puzzles

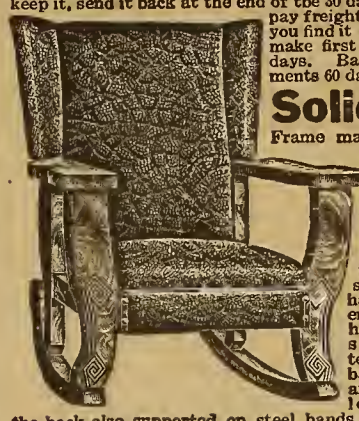
Puzzles Printed Last Issue

All Around the House Rebus

The answers to the All Around the House Rebus—Back Home Again are: Pupils, studies, history, zoölogy, mathematics, and examinations.

YEAR TO PAY
No Money In Advance

Send no money but get this splendid rocker for 30 days' free trial. If, for any reason whatever, you don't wish to keep it, send it back at the end of the 30 days and we will pay freight both ways. If you find it all you expect, make first payment in 60 days. Balance in payments 60 days apart.



Solid Oak

Frame made entirely of kiln dried hard wood. The arms and front posts are of genuine quarter-sawed oak, other exposed parts being seasoned solid oak and all handsome golden finish. Seat has four springs supported on tempered steel bands and there are six 5-inch pillow springs in the back also supported on steel bands. The filling is wood fibre and cotton felt. Handsomely upholstered in imitation Spanish brown leather. Height of seat from floor 17 in. Height of back from seat 25½ in. Seat is 19x19 in. Width of chair over all 30¾ in. Shipping weight about 40 lbs. Shipped direct from Chicago warehouse or factory in Western New York State.

Order by No. 79MA7. Price $5.48. No money in advance. 98c in 60 days. 90c every two months.

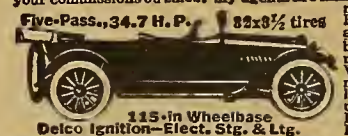
Free Bargain Catalog

Great 454 page book shows thousands of amazing bargains in furniture, stoves, ranges, rugs, carpets, silverware, engines, separators and other farm necessities. 30 days' free trial on anything you want—and a year to pay. No C.O.D. No deposit. Send post card for this Catalog.

THE HARTMAN CO., 4039 LaSalle Street Dept. 892 Chicago

Driver Agents Wanted

Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 9RZ



BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

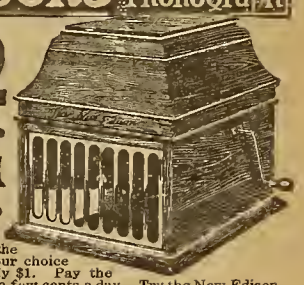
IF WE SEND YOU THIS BICYCLE

For you to keep and use for a month as your own, Would You then agree to show your bicycle to ten or more of your friends and tell them the ridiculously low factory price, easy terms, unusual conditions and exceptional offers I would make, all of which I will explain to you if within ten days of seeing this you will say in a letter or on a postal, "*Send particulars of Bicycle Offer*" and address your postal card or letter:

Personal for G. L. LEWIS, Manager
MEAD CYCLE CO., 88 Mead Block, Chicago

Mr. Edison's Wonderful Phonograph

Only $1.00 After Free Trial



Yes, you may keep this new Edison—Thomas A. Edison's great phonograph with the diamond stylus—and your choice of records, too, for only $1. Pay the balance at rate of only a few cents a day. Try the New Edison in your own home before you decide to buy. Send no money down. Entertain your friends with your favorite records.

Write Today For Our New Edison Book. Send your name and address for our new book and pictures of the New Edison phonographs. No obligations.

F. K. BABSON, *Edison Phonograph Distributors*
4036 Edison Block Chicago, Illinois

Quickstep Shoe

HAS THE HIGH COST OF SHOES AFFECTED YOU YET?

Join the "Quicksteppers" and save money.

Buy direct from the manufacturer and save the profits that the wholesaler and retailer make on your shoes. You will like our shoes when you see them, and you will appreciate the money saved in buying from us.

We guarantee to satisfy you, or refund your money.

Send for Big Fall Catalogue E. You can't help being pleased with the styles and prices.

QuickstepShoeCo., Box 2664, Boston

MAKE $200 A MONTH

New Gas Generating *Coal-Oil* Lamp. Lowest priced high-grade lamp on the market. Guaranteed.

300 Candle Power

Brilliant, yet soft and easy on eyes. Can't explode. Safe in any position.

Costs Less than a Cent a Night

Wonderful seller. Low price makes it easy to sell in every home. Tice made $45 in 5 days. Hollman's average $60 a week. Hart making $200 every month. King averaging $10 a day. Write quick for demonstrating sample if you mean business. We furnish representatives with auto to travel in.

THOMAS LAMP CO. 1346 Gay St. DAYTON, OHIO

This new book shows you the complete line of Kalamazoo Stoves, Ranges, Furnaces, Gas Ranges, Kitchen Kabinets and Tables. Ask for copy today.

Get this Great Book

of Economy Prices

"A Kalamazoo Direct to You"

TRUE economy means getting the highest quality at lowest price. That's exactly what you get in "A Kalamazoo Direct to You."

You get quality that has built up the largest manufacturing plant of its kind in the world—quality that has satisfied over 300,000 customers—made everyone a booster for us and our way of doing business. Here's your chance to economize the **right** way.

Get the article you want for less money than you thought necessary. You certainly save money in getting "A Kalamazoo Direct to You." No one can quote a lower price on any article than the manufacturer. And no one can give you better quality than what you get in a Kalamazoo. Send us your name and let us send you this great book telling all about it.

Do You Need a New Stove, a New Range, Furnace or Kitchen Kabinet? You'll find it in this book. It shows the full line of Kalamazoo products. Shows our great line of stoves and ranges—the newest designs—the popular fuel and work-saving features—a stove for every home and at the price you want to pay.

If you are in need of a new heating plant learn about the Kalamazoo Pipeless Furnace, the practical, money-saving home heating plant. Easy to install—only one big register and cold air returns. Heats the entire home with a circulation of warm air. Burns any fuel.

Get a Kalamazoo Furnace and avoid having to burn high-priced fuel this winter. Burn the kind that's easiest for you to get and that will heat your home at lowest cost. Kalamazoo Pipe Furnaces are furnished with heating plans free.

Kalamazoo Stove Company
Kalamazoo, Michigan

Please send me your complete catalog No. 183 of Kalamazoo Products.

Name _____

Address _____

Please check articles you are interested in

☐ STOVES ☐ RANGES ☐ FURNACES
☐ GAS RANGES ☐ KITCHEN KABINETS and TABLES

QUICK SHIPMENT—NO WAITING. Every article shown in our catalog is stocked in our warehouse, ready for immediate shipment. Now is the time to get your new stove, range or furnace. Don't wait. The shortage of materials is raising prices and holding up deliveries for many manufacturers, but so far Kalamazoo customers have been protected by our big stocks on hand. Get our catalog at once and send in order early. **30 days' trial —cash or easy payments. Ask for Catalog No. 183.**

KALAMAZOO STOVE CO., Mfrs.
Kalamazoo, Mich.

We sell Stoves, Ranges, Gas Ranges, Furnaces, Kitchen Kabinets and Tables.

WE PAY THE FREIGHT
and Guarantee Delivery in Good Condition at your nearest Railroad Station

"A Kalamazoo Direct to You"
Trade Mark Registered

6
F22
v.40
Farm and f
JAN 6 - 19 BINDE